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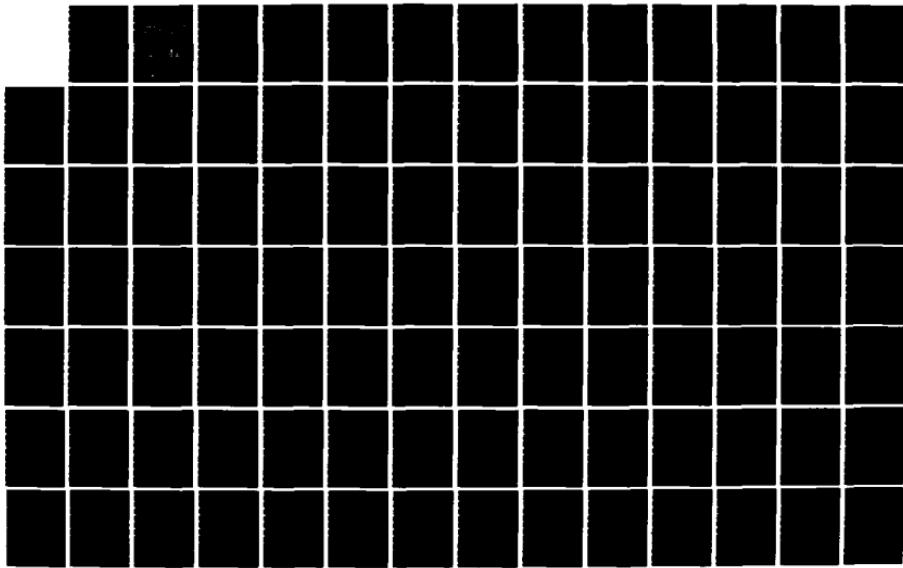
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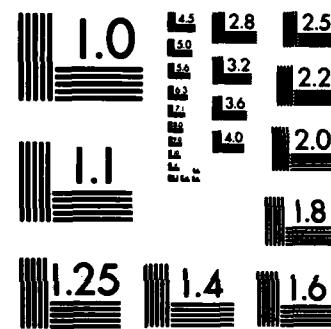
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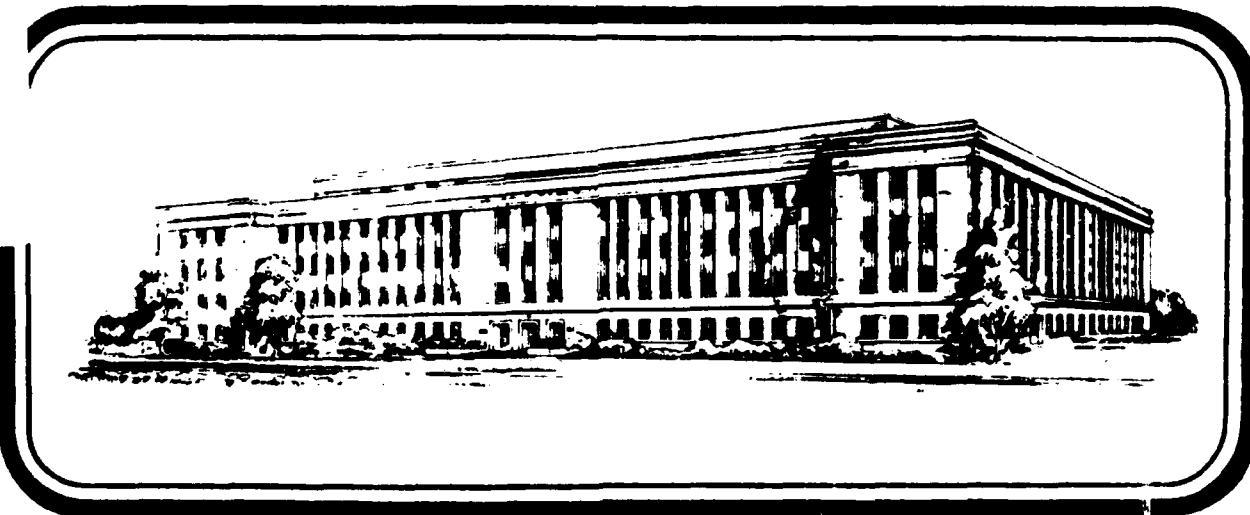
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MOBILIZATION AND DEFENSE MANAGEMENT
TECHNICAL REPORTS SERIES

TRAINING METHODOLOGIES TO PERMIT
GREATER RELIANCE ON RESERVE FORCE
NON-DIVISIONAL MAINTENANCE UNITS

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MOBILIZATION STUDIES PROGRAM RESEARCH PAPER

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INDUSTRIAL COLLEGE OF THE ARMED FORCES
NATIONAL DEFENSE UNIVERSITY

MOBILIZATION STUDIES PROGRAM REPORT

TRAINING METHODOLOGIES TO PERMIT GREATER
RELIANCE ON RESERVE FORCE NON-DIVISIONAL
MAINTENANCE UNITS

by

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A RESEARCH REPORT SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE RESEARCH
REQUIREMENT

RESEARCH SUPERVISOR: COMMANDER HARDY L. MERRITT, USNR

INDUSTRIAL COLLEGE OF THE ARMED FORCES
MAY 1983

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ABSTRACT

Problem Statement Reserve Component Combat Service Support nondivisional maintenance units are faced with major training challenges by Army Force Modernization. To meet these challenges new initiatives in the Army's approach to Combat Service Support reserve unit training are required.

Findings

1. Most Reserve Component maintenance units are not acquiring the technical proficiency to support either new or current tactical systems in the Active Force.
2. Units have limited access to combat systems and must develop individual training plans centered on obsolete equipment.
3. Spare parts, special tools, test equipment, and manuals are often not on hand.
4. Unit commanders are not fully aware of their CAPSTONE mission requirements.
5. The chain-of-command does not fully appreciate the specific training needs of nondivisional Combat Service Support maintenance units.
6. Innovative training, where it occurs, is usually the result of a unique situation and local RC commander initiative.

Recommendations

1. Align early deploying CSS maintenance units with AC training assets found in TRADOC, DARCOM, and FORSCOM Army Reserve and Army National Guard.
2. Establish Centralized Reserve Maintenance Training Centers (CRMTC) supported by USAR schools.
 - a. Conduct weekend Inactive Duty Training at selected Training and Doctrine Command service schools.
 - b. Conduct weekend Inactive Duty Training at selected Military Development and Readiness Command depots.
 - c. Conduct weekend Inactive Duty Training at designated Reserve Component full-time maintenance facilities.
3. Use the full six months of Initial Active Duty to train CSS (maintenance) reservists.
4. Establish regional cooperative programs using all available maintenance training assets.
5. Develop a sophisticated annual training evaluation program that will truly evaluate technical maintenance skills
6. Revise the Army readiness report system for CSS maintenance units to more accurately reflect their maintenance capability.

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EXECUTIVE SUMMARY

Army force planning places heavy reliance on reserve maintenance and other logistical support units. Decreases in numbers of active component maintenance units, defense planning that visualizes a "come as you are" war scenario, and new tactical weapons and support systems employing advanced technology contribute to the need for adequately trained reserve maintenance units. A study was proposed to determine if Army Reserve Component (RC) Combat Service Support (CSS) maintenance units could effectively mobilize, deploy, and ultimately sustain a committed force. When the study proposal was presented to Major General Vincent E. Falter, Chief, Army Force Modernization Coordination Office (AFMCO), HQDA, he challenged the study group "to find and recommend innovative ways to train RC maintenance units prior to M-day in support of the Army's latest tactical equipment." Thus, the study centers on the feasibility of premobilization training initiatives designed to increase the capability of nondivisional maintenance units to respond to early deployment to a major theater.

More than seventy percent of the Army's CSS maintenance capability is in the Reserve components. The study group made an early assumption that the Army could not afford to individually equip all early deploying RC maintenance units with enough equipment, tools, test sets, repair parts, and other training items needed for mission training. It was also considered prohibitively expensive to equip and staff numerous "Regional Training Centers" established solely for the purpose of providing RC maintenance training support. Yet, the Army must provide a system for training such units. The training solutions proposed in this report draw on the experience of RC maintenance unit commanders and on several ongoing programs that attempt to solve the complex problem of training RC CSS maintenance units.

Findings

1. Early deploying RC nondivisional CSS maintenance units do not have the MOS proficiency necessary to effectively support current generation tactical systems without extensive postmobilization training.
2. RC maintenance units have little or no access to major AC combat systems and must develop individual training plans around older model wheeled vehicles and other less sophisticated pieces of tactical equipment. Such equipment does not provide a proper training medium for early deploying units expected to support the Army's latest equipment.

3. Wartime mission spare parts, special tools, test equipment, and repair manuals are not on hand in RC maintenance units.
4. Unit commanders are not always aware of their CAPSTONE mission in terms of MOS proficiency and equipment requirements.
5. The RC chain of command does not fully appreciate the wartime mission training requirements of their nondivisional CSS maintenance units. Active Army unit advisors focus primarily on annual training and unit training programs rather than MOS proficiency. Decentralized training management does not provide adequate emphasis on MOS training.
6. The Army's unit readiness report system does not accurately portray the true training readiness of RC CSS maintenance units.
7. Nondivisional DS and GS maintenance units, under current doctrine, are organized to repair all tactical systems in the Army inventory except aircraft, medical and special systems. Because deployment and employment concepts are by companies and battalions, training is often accomplished in the same manner.
8. Geographic dispersion limits unit access to wartime mission equipment for training.

Centralized Premobilization Training Concept

Centralized premobilization maintenance training is a way of ensuring that selected RC maintenance units have access to tactical equipment, tools, test sets, and instructors. Simply stated, the reserve member sustains MOS proficiency by attending formal MOS instruction on weekends in lieu of unit drill. Training would be provided by an appropriate active Army installation or depot, TRADOC service school, or full-time ARNG/USAR maintenance facility, supported by the USAR school system.

The concept requires the development of a master plan at the FORSCOM and CONUSA level that would designate certain installations, maintenance depots, service schools, and RC maintenance facilities as Centralized Reserve Maintenance Training Centers (CRMTC). Planners would identify a unit as an early deploying unit (CAPSTONE) based on its proximity to one or several CRMTC facilities. Unit commanders, in turn, would develop their annual training plans based on their ability to train at specified CRMTC facilities. The selection of CRMTC facilities would be based on geographical location, RC maintenance unit densities, USAR school locations, and the availability of equipment and instructors.

Although a CRMTC may be capable of providing a wide range of instruction, many reserve and active component facilities are geographically close enough to be mutually supportive. This study identified seven geographical areas that contain sufficient Army facilities, both active and reserve, to be considered a regional CRMTC area. These regional CRMTC areas could provide integrated

training programs to approximately thirty percent of the existing RC nondivisional maintenance units. Additionally, by judiciously converting some existing direct support (DS) units to general support (GS), another 10 to 15 percent of RC nondivisional maintenance capability could be included in this program. By integrating training programs and resources, units located in these zones could have the benefit of a full range of MOS instruction taught on a wide variety of the Army's equipment.

The USAR school system is vital to the CRMIC concept. USAR schools would be responsible for liaison with unit commanders and CRMIC Commanders. USAR school instructors and qualified RC full-time personnel would be used in support of the concept. TRADOC developed training materials would materially assist the program.

Conclusions

The Army has focused primarily on unit and postmobilization training. Very little has been accomplished on premobilization training of highly technical skills. Complex new systems in the Army's Force Modernization program have changed needs. Today's new tactical systems require more intensive MOS training concepts for the RC maintainer similar to those found in the AC training base. The current Army readiness report does not accurately portray the true MOS proficiency of CSS maintenance units.

This paper attempts to bring together a "menu" of high-payoff, low-cost options that may be tailored to the needs of the unit. They are designed to counter systemic problems of long duration as well as to capitalize on what now exists in the field and can be made affordable without major dislocations in structure, unit locations, doctrine, or resource distribution.

Recommendations

1. Make maximum use of the reserve six-month initial active duty option by providing additional maintenance training beyond basic and advanced individual training.
2. Establish and conduct weekend IDT MOS proficiency training at selected TRADOC service schools, DARCOM Army maintenance depots, and RC full-time maintenance facilities with the full participation of USAR school qualified instructors.
3. Develop and conduct annual training evaluation programs specifically designed to provide an accurate evaluation of unit MOS maintenance skills.
4. Where appropriate, orient, selected RC units with major weapon systems based on unit need to receive systems-specific maintenance instruction.
5. Develop fully integrated regional training programs where unit densities, training facilities, and geographical location permit.
6. Revise the Army unit readiness report for RC CSS units portray to more accurately true maintenance capabilities.

CHAPTER I
INTRODUCTION

Background

With the adoption in 1973 of the Total Force Concept as a formal policy by Secretary of Defense James R. Schlesinger, the Army was irrevocably cast into a force structure of interdependent active and reserve components committed to becoming a single integrated force. Army National Guard (ARNG) and U.S. Army Reserve (USAR) logistical support units are crucial elements of the concept. Although the number of Active Component (AC) logistical support units has declined as a result of force structure changes, corresponding Reserve Component (RC) units have replaced them. The total force concept has allowed the Army to significantly alter its active force structure by assigning RC combat service support (CSS) units early deploying wartime mobilization missions. A good example was the drawdown in the late 1970s of ammunition supply units throughout USAREUR. Today the Army's residual ammunition capability has been shifted to the RC force structure. Similarly, RC maintenance units now comprise more than 70 percent of the Army's nondivisional maintenance support capability.¹ Whereas it may be acceptable to replace AC general purpose logistical support units with equivalent RC units, however, it may not be as appropriate to replace AC technical maintenance elements with RC CSS units that require extensive sustainment training and modern equipment to be capable of mission accomplishment. Recognizing that the trend is unlikely to be reversed and that the Army's reliance on RC logistical support units has increased, the authors of this paper focus on possible training approaches to insuring that RC maintenance

units are prepared, prior to mobilization, to meet their wartime mission. The study specifically is directed to RC nondivisional direct and general support (DS, GS) maintenance units because of their importance to the Army's on-going Force Modernization program and because solutions to critical mobilization questions concerning these units have not been forthcoming.

Mobilization Preparedness

A key conclusion made during the conduct of this study was that RC nondivisional maintenance units do not have the means, in terms of equipment, time and instructors to effectively conduct premobilization training. A survey of the Army's priority maintenance units, in terms of mission and wartime deployment schedules, indicates that the trend in Army planning is to include an ever-increasing number of RC units in early deployment phases of war plans.² This trend has occurred during a period of intense Force Structure change brought about by the advent of new sophisticated weapons and doctrinal changes as exemplified by the new Air, Land Battle concepts.³ The impact of such change on the ability of RC maintenance units to maintain a high state of training readiness and mobilization preparedness has been significant but, as yet, has not been precisely determined. It is clear, however, that early deployment plans will not succeed unless premobilization training and equipping of such units is significantly upgraded.

It, seems prudent, therefore, to ensure that effective premobilization training programs are readily available to RC maintenance units. This paper attempts not only to determine the need for extensive premobilizaton training but also to develop training methodologies that will ensure training readiness.

Force Modernization

Force Modernization (FM) refers to the recent introduction of numerous new tactical systems into the Army inventory. During the past decade, high technology electronic and mechanical subsystems have become the norm in virtually all combat vehicles and other tactical and support equipment. At the same time, huge Force Structure increases brought about by Division 86 Combat Capability Study recommendations have dramatically increased the densities of high technology equipment in the active force.⁴ The FM program occurs within a relatively narrow time frame (FY 80 to FY 86) and involves an extremely high number of very sophisticated systems, estimated at more than 35 major tactical systems and more than 400 total systems altogether.⁵ This massive infusion of new tactical systems presents an overwhelming challenge to RC maintenance unit commanders who must stay abreast of the latest technology and are having difficulty keeping up with the current generation of equipment. It is no longer feasible to expect RC maintenance units to maintain MOS proficiency on new tactical systems without more direct access to the training base where effective maintenance training can be conducted.

Employment

During the past decade, logistical maintenance support doctrine has not kept pace with other combat developments (principally, Division and Corps 86 studies), and this uncertainty has added an element of confusion to the basic

organization and employment of DS/GS maintenance units.⁶ Employment concepts are critical to the way RC maintenance units should be organized and trained. An analysis of the future battlefield is required as well as a determination of nondivisional maintenance units as to theater location, facilities, equipment, support systems, and level of repair. The current structure of multiple MOSs found in nondivisional maintenance units presents one of the greatest peacetime challenges to training found in the Army Reserve.⁷

General Observations

Initial research indicated a significant number of studies and other literature addressing problems associated with reserve forces mobilization. The majority of this literature readily identified many of the systemic training problems found in RC CSS units. Much of their emphasis, however, was on postmobilization training problems and solutions. Premobilization training, when addressed, focused primarily on unit common subjects, field exercises, and unit participation in Annual Training (AT). It was clear from the background search that a new focus on all aspects of premobilization training, to include MOS training, was required. In order to determine the issues and their possible solution, it was decided to use the case study method as the basic research tool. Thus, Chapter II outlines the training needs of RC CSS nondivisional maintenance units using the examples of four CSS maintenance units.

Study group visits to headquarters from Department of Army down to company size units found a general awareness of premobilization and postmobilization issues. Again, unit rather than individual training problems were presented as the most pressing premobilization issue. The exception was at the company, detachment, and section level where a highly motivated group of RC warrant officers and NCOs strive to get enough equipment, time, and capable instruction for individual MOS training.⁸

A major concern in the field referred to the inability of the Army to provide RC units with sufficient training equipment. The study group was keenly aware that several previous Army studies had recommended the creation of large, equipment-intensive RC regional training centers, only to have such proposals rejected by the Army as unrealistic and costly. Thus, it is important to the reader to understand that the centralized training proposals outlined in Chapter III and IV are based on an assessment of capability that exists today within three MACOMs of the Army. Any meaningful proposal will require additional resource support, but the emphasis in this paper is on planning, programming, and management of existing resources.

An interesting aspect of the study was the number of CSS maintenance units commanded by other than ordnance branch officers. Often, the unit active Army advisor was similarly qualified. The net result seemed to be a loss of focus on training management issues at the unit level. It also became clear as discussions and visits progressed that, until now, no one seemed to be "in charge" above the unit level. Yet, at various levels within the system some

major efforts were being made that could have great potential. The HQDA (DCSOPS) ongoing Support Unit Capability Alignment Program, represents the progress needed to solve the problem.⁹

Study Approach

At the unit level, some commanders, eager to improve their training posture, have developed training schemes based on TRADOC, FORSCOM, and DARCOM facilities and equipment readily available to them geographically. These schemes included training at service schools, maintenance depots, active duty posts, and, in some cases, RC full-time maintenance facilities.¹⁰ The programs at the Army Ordnance School and Letterkenny Army Depot were directed at premobilization training of individual reservists and emphasized the development of skill level training for long-term results. Thus, a major thrust of this study was, first, to analyze all possible training alternatives in terms of what was being done presently in the field and then to expand on the concepts unit commanders found expedient. In the proposed concept, outlined in Chapter III and IV, the facilities of the CONUS Army MACOM used for RC individual training are described. Named Centralized Reserve Maintenance Training Centers (CRMTC), the facilities are separate or combined RC premobilization training sites that have, by virtue of their primary mission, training equipment, instructors, and management to conduct such training.

The integrated regional program proposed for some CRMIC geographical areas simply recognizes that many of the Army's training sites and equipment facilities are geographically close enough to be mutually supportive. For example, it was found that within a 200 mile radius of the Army Ordnance School there are two major DARCOM depots capable of providing significant premobilization MOS training. Where such facilities exist in one area, such facilities could provide a tremendous training opportunity for units able to travel the required distance for training.¹¹

This study seeks to isolate the critical training limitations facing RC nondivisional maintenance units and to suggest solutions to improve training preparedness. The study offers courses of action that should move the Army dramatically forward toward solving a key readiness shortcoming: the lack of an effective premobilization training program for RC nondivisional maintenance units. The issues that require resolution are the degree to which the Army can conduct meaningful RC premobilization maintenance training at Army installations and facilities, both active and reserve; the type activity that can best conduct such training; and the major considerations to be resolved.

CHAPTER II
TRAINING ENVIRONMENT

Introduction

To gain a more accurate appreciation of what was actually happening in the field, the study group visited various active and reserve headquarters staffs and units representing different levels in the chain of command, from Department of Army Staff (DA) to RC company and battalion size units. (See Appendix A: Units and Organizations Visited.)

In addition, a large number of previous studies and other documents were reviewed to assist in developing an accurate awareness of the issues. The findings of an April 1979 working paper by the Logistics Management Institute (LMI)¹ largely substantiated our own observations on the ability of maintenance type units to train and perform effectively. A 1982 HQDA trip report on a South Dakota HEM unit and our own observations form the basis for the findings at the unit level.

The Unit Level

The primary responsibility of nondivisional direct and general support (DS/GS) maintenance units is to provide intermediate maintenance support to theater and corps equipment and backup direct support for division equipment.

DS companies have the capability of repairing end items and subassemblies as well as troubleshooting and calibrating tactical systems. They also supply low-dollar, high-demand repair parts, critical items, and assemblies to supported units. Corps DS Forward maintenance companies are located close to the division rear boundary and back up the divisional maintenance units. Forward maintenance companies are generally lighter and have less equipment than either a DS Rear Area maintenance company or General Support company. GS maintenance companies receive overflow maintenance work and are capable of repairing major assemblies, handling items for direct exchange, evaluating materiel for overhaul, and operating a property disposal point. Unserviceable division equipment normally bypasses DS units and goes directly to GS units. Table 2-1 lists the materiel repair capability of Army nondivisional maintenance companies by type unit. Figures 2-1, 2-2 and 2-3 depict the organizations of CSS, DS, and GS light and heavy nondivisional maintenance units. (The table and figures are located at the end of the chapter)

Because of their fundamental importance to the CSS force structure, GS light and heavy equipment maintenance (LEM/HEM) companies were examined. The scope of the paper did not permit observation of aviation and medical units.

Observations

The study group visited four nondivisional GS maintenance units (one Light Equipment Maintenance company, one DS company, and two Heavy Equipment Maintenance companies, National Guard and U.S. Army Reserve).

The 195th HEM Company, Westminster, Maryland,² had, by their standards, a dynamic training program. They exhibited high morale and enthusiasm. Being prepared to accomplish their mission was paramount. Much of what was being accomplished was due solely to local command initiatives. During the past few years training programs included MOS transitioning from an artillery searchlight unit to an HEM company with assistance from the Army Ordnance School, Aberdeen Proving Grounds. It had completed one CONUS annual training (AT) period, and one OCONUS, CAPSTONE oriented, AT. Another OCONUS AT is planned for FY 1983. Yet this early deploying unit did not have training equipment, training devices, tools, and test sets, nor did it have an updated Authorized Stockage List (ASL) of repair parts to meet its CAPSTONE mission. Its USAR Center facility could not support effective war mission training. At best, this unit would have difficulty in supporting its CAPSTONE mission. Access to Letterkenny Army Depot, Tobyhanna Army Depot, and the Army Ordnance School provided the only available means of supporting their training efforts. They stated that the Ordnance School was especially helpful during transition training; but self-paced training courses were, at most, marginally effective. In addition, in the opinion of the unit commander, task-oriented instruction failed to sufficiently develop unit technicians. He felt that more basic theory was necessary for the RC soldier to become an effective soldier because there are so many tactical systems. Many unit soldiers expressed the view that it is impossible to be proficient on all critical tasks for each system. They added that, left to their own resources, they had little capability to conduct technical MOS training as an HEM unit. They suggested that better advantage should be taken of the reservist's active duty

for training (ADT) period. This could be done by developing a full six-month ADT schedule to include basic, advanced, and follow-on individual technical training.

The unit reported that the OCONUS AT did not provide an adequate training evaluation of unit technical skills and failed to identify their specific wartime maintenance mission. The unit commander was unable to prioritize his maintenance training as a result of the OCONUS training. The two-week limitation on AT was too short to facilitate accomplishment of technical training objectives. Planning and preparing for a CAPSTONE aligned OCONUS AT period required considerable unit IDT time at the expense of training.

The 1007th LEM Company, Hagerstown, Maryland,³ was a prime example of what seemed to be an effective unit. The unit was up to strength, occupied modern facilities appropriate for their mission, and had good leadership. However, the unit lacked training equipment, tools and test sets, repair manuals, and an ASL for spare parts. The only equipment available to the unit was organizational. Yet the unit members insisted that they were adequately trained. The proximity of Letterkenny Army Depot provided a unique opportunity for on the job (OTJ) MOS training during IDT. An important advantage was the fact that many of the unit members were full-time civilian technicians at the depot. This also facilitated MOS training and allowed the unit to report a higher state of training readiness than would normally be possible. It was reported, however, that because of higher headquarters emphasis, the unit focused primarily on unit training and common soldier subjects rather than MOS skills. It was reported that AT focused largely on

unit level activities and there was no formal evaluation of MOS skills. Despite the fact that the unit was CAPSTONE aligned to USAREUR, it had little information on what equipment it might be called upon to repair in wartime. Thus, the unit was unable to prioritize its training effort toward known training needs. Because of a lack of training management focus and the fact that Letterkenny had mostly older equipment to be rebuilt, the unit was not certain where it stood on MOS training. The unit saw little utility in using TRADOC exportable training products that were thought to be incompatible with their own training methodology by being task oriented rather than theory oriented.

The 3622nd HEM Company (ARNG), Lancaster, Pennsylvania,⁴ exhibited almost the same strengths and limitations as the previously cited units. The unit was attempting to conduct some MOS proficiency training by sending individual soldiers to two nearby Army depots (Letterkenny and Tobyhanna) and to the Army Ordnance School for training. This training was not yet a formal program, and the commander did not require his soldiers to take such training to maintain MOS proficiency. Some unit members reported that the lack of productive IDT training time was a big deterrent to unit personnel retention, and they cited a need for a more structured MOS training program.

The geographical location of this unit provided a highly favorable training opportunity not normally enjoyed by other units. Despite this fact, unit personnel highlighted several drawbacks to utilizing these active component training assets under today's conditions. They felt that MOS training at the depots and schools needed to be more institutionalized and conducted over a longer time frame so that it becomes more of a routine

arrangement. They stated that administrative and common skills training levied by higher headquarters used an inordinate amount of IDT time and detracted from MOS training. This created a time management problem at the unit level. Travel time to the depot or school is a concern if the unit is located more than three hours from the training site. The commander questioned the wisdom of prolonged MOS training outside the unit area and cited loss of control as a potential problem. As with the other units, unit readiness reporting reflected high marks for training that, in fact, is not justified by the situation on the ground.

The 3647th Maintenance Company, 329th Support Group, Virginia Army National Guard,⁵ has many of the same problems cited by the units already discussed.⁵ Although the motivation of its personnel is high, because of recent TOE changes the unit was severely understrength, especially in the junior enlisted grades.

The unit enjoys some significant training advantages, however, the 3647th is co-located with a ARNG Combined Support Maintenance Shop (CSMS). Many of its senior personnel are full-time employees of the CSMS and have a high degree of experience in the maintenance field. Some of the full-time personnel participate as instructors for unit members during weekend IDT. Under this arrangement unit personnel receive "hands on" OJT instruction on a regular basis, but the equipment available to this unit is that which is found in the ARNG inventory and supported by the CSMS. It is significant that the unit regularly sends some personnel to Fort Pickett to gain experience on

tracked vehicles inasmuch as none are available in the area supported by the CSMS. Even with this arrangement the unit does not have ready access to the Army's latest equipment, because much of the equipment available at Fort Pickett is current USAR/ARNG inventory and not wartime mission equipment. The primary mission of the CSMS is to ensure the availability of equipment for RC combat units during AT. This takes priority over any other training considerations if there is a conflict. Finally, the effort is not supported by TRADOC training materials or a formal program of instruction. Although the 3647th is in position to take advantage of excellent facilities and equipment, most of this unit's efforts have to be directed at older models of equipment and not the modern equipment this unit might be required to support in wartime.

The 3652nd HEM Co, North Dakota National Guard,⁶ is discussed in a trip report (see Appendix B) that best illustrates the problems of isolation and limited access to equipment. This trip report provided members of the study group with a unique perspective on the problems of a truly isolated unit. The report provided an assessment of MOS training shortfalls and helped validate data reported in actual visits by team members to other units. This independent report helped the team devise new solutions based on an analysis of training needs demonstrated by the units visited.

Findings

All the units visited, except one, had achieved at least 95 percent personnel strength and had worked hard to develop a high level of individual

motivation. They were proud of their accomplishments and considered themselves capable of mission performance.

The true picture of unit readiness, however, was not readily apparent in unit qualification ratings under current readiness reporting procedures.

Unit Readiness Reporting

All the units visited indicated a significantly higher MOS qualification rating than the one reported in the 1979 LMI Study.⁷ When current accession data was compared with the 1979 LMI study on RC maintenance unit readiness, it seemed that recent favorable trends in recruiting correlated directly to training readiness. Yet, with the possible exception of personnel quality, little in the way of training methodology or opportunity had changed since 1979. It was learned that the determination of MOS qualification is highly subjective. A member can be considered MOS qualified either by successfully completing an MOS course at an Army Service school or by unit membership for a prescribed length of time, usually six months to a year. A member could also be considered MOS qualified as a result of having worked in the MOS during AT. Inasmuch as most units do not receive a formal MOS evaluation during AT, this practice is highly questionable. Even more important, statistical averaging of MOS qualification ratings allows a unit to report a higher state of readiness than is the case. Very often, critical low density MOS shortfalls are not reflected in the report. Whereas it was clear that training readiness was thought to be quite high, individual MOS proficiency had not, in fact, been adequately measured.

MOS Proficiency

All the units analyzed by the study group will have extreme difficulty supporting any equipment other than wheeled vehicles, small arms, and some minor pieces of tactical equipment such as gasoline generators. These units were not proficient in turret repair, tracked vehicles, artillery fire control, communications equipment, and other major tactical systems repair. This deficiency stems primarily from the lack of a suitable training base dedicated to RC maintenance units.

Authorized Stockage Lists and Spare Parts

Largely as a result of not having access to newer tactical systems and because unit MTOE are not always updated as required, the units have not acquired the spare parts, special tools, test equipment, and repair manuals needed. ASL that were on hand were for older equipment less frequently used by today's active forces. It is essential that a priority be established so that early deploying units have the appropriate support equipment in order to deploy within their M-day schedule.

CAPSTONE Alignment

The full implication of CAPSTONE mission requirements is not fully understood on both the reserve and active sides of the force. Unit MOS qualification should indicate a degree of training readiness and help identify the true status of the unit. Because most units report a high state of training readiness despite severe equipment shortages, there is little CAPSTONE planners can use to determine deployment priority. This is a major detractor in determining which training programs are appropriate for RC

nondivisional maintenance units. For example, the units located near AC installations that can provide training assistance should have the earliest deployment dates, and not necessarily units that report C-1 in training. Unit commanders of early deploying units not only should have access to an appropriate training facility, but also should be able to focus on the major combat systems they are most likely to see in their CAPSTONE role. There was little evidence that Army CAPSTONE planning considered the actual training capability of a unit.

Active Component Training Support

To acquire and sustain technical MOS skills, RC maintenance units must have access to the major combat systems or suitable training devices for those systems. Repair parts and manuals are essential. Preferably, training equipment should be the same as the equipment the unit would be responsible for maintaining during wartime. This is not generally the case with today's RC maintenance units. Lacking formal access to equipment and instructors, units have devised a variety of approaches using the closest available equipment.

It was observed that some units were able to accomplish significant training goals with the assistance of active component installations and activities. These units were all located close enough for soldiers to attend MOS related training during a weekend IDT period. Nevertheless, in the absence of formal testing or evaluation and because these programs were largely ad hoc arrangements, the actual increase in MOS skill qualification

since 1979 must again be considered questionable. It is clear that the Army needs to formalize AC assisted training initiatives in order to develop MOS training programs and to formally evaluate each unit during AT to give the Army an accurate picture of their true capability.

Although unit commanders were highly laudatory of AC efforts made so far to assist in their MOS training programs, several concerns were expressed that require the attention of Army planners.

1. More IDT periods should be devoted to MOS training, and administrative and common soldier skills training should be reduced accordingly. The development of soldier skills would present the least training problem upon mobilization.

2. Travel time to suitable training sites is a concern if the unit is located more than three hours from the training facility.

3. Commanders felt a need to see and train their personnel together as a unit and were unsure of the advantages of MOS training outside the unit area.

4. Although some Army installations offer excellent training opportunities, some important administrative details and procedures need support of higher headquarters to be effective, i.e. staffing and funding.

5. The almost universal lack of TRADOC training materials appropriate to the type of equipment available is a major concern.

The Chain of Command

During visits to HQDA, HQFORSCOM, HQTRADOC, and HQDARCOM, it was evident that there was a general awareness of RC CSS training shortcomings. Inasmuch

as MACOM responsibilities for reserve component training differ, however, very diverse views on the ways to solve the problem were apparent. Accordingly, it has been necessary for the Army Force Modernization Coordination Office (AFMCO), DCSOPS, HQDA, to bring together the responsible parties required to address training issues in addition to equipment, spare parts, and other modernization issues. (See footnote 9, p. 95.) What seemed to be lacking in the overall process was a full appreciation on the part of all MACOM that RC CSS training is a complex undertaking vastly different from tactical unit training and that only by a concerted effort could FORSCOM, through its CONUS Army structure, implement the appropriate premobilization training. There have been some successes.

Impact of Force Modernization

The Army's recent experience with Force Modernization has strengthened command awareness of the many challenges modern equipment places on existing training systems. For example, after a concerted effort, M-1 tank fielding and training for AC units has essentially been solved. Recently, a North Carolina National Guard tank battalion was designated to receive M-1's. When maintenance training and other shortcomings became evident, the Army moved fast to correct these deficiencies. Force Modernization has created for the Army a situation that requires AC and RC training problems to be resolved essentially by the same solution--that is, the development of a formal RC maintenance training base. Whereas the active force can eventually obtain maintainers from the TRADOC school system for all the many new systems fielded in the force, the RC must continue to develop skills without a training base and infrastructure to acquire and sustain the needed skills. The TRADOC

training base, judging from information provided the study group, stands ready to provide what may be required. What is necessary from HQDA is a definitive policy that extends present CAPSTONE planning beyond overseas alignment to training, manning, and equipping issues. FORSCOM, with assistance from TRADOC and DARCOM, must implement the policy. Basic policy direction is crucial if the RC CSS units are to overcome present training and proficiency shortfalls. Once actual mobilization requirements are known in terms of training needs, Army planners can allocate resources and assign responsibility.

Forces Command

A new approach to RC maintenance training is required. Although FORSCOM is charged with the basic responsibility of training reserve forces, FORSCOM emphasis is clearly placed on training tactical combat units and common soldier skills. Training policy often does not directly address the RC CSS training process or MOS requirements. It was noted that the organization of personnel resources at HQ FORSCOM did not lend strong support to the massive effort that is required in this area. Individuals who were working the issues were there principally because of Force Modernization and were located throughout the various staff elements.⁸ What seems to be needed is a stronger training staff element that will deal with policy issues and orchestrate the efforts of other involved MACOMs. FORSCOM is the proponent for CAPSTONE. The unit alignments developed under the current FORSCOM CAPSTONE doctrine are relevant to CSS units. As a first step CAPSTONE planners should consider proximity of a maintenance unit to an RC maintenance facility when establishing the unit's deployment priority. The use of RC maintenance facilities for training purposes is discussed in detail as Proposal Three in Chapter IV.

Training and Doctrine Command

With the important exception of the Army Ordnance School, HQ TRADOC was found to be generally unaware of key RC premobilization training issues.¹⁰ Attempts by the Army Logistics Center (LOGC) and the Army Training Support Center (ATSC) to develop a coordinated TRADOC position on RC CSS training issues frequently failed simply because they were not given a high enough priority for resolution. Coordination with FORSCOM was reported to be nonexistent. Resource and doctrinal questions, as yet unresolved, also contribute to inertia on these matters. For example, the important Army Ordnance School pilot CSS training program was reported not to be fully supported by HQ TRADOC because of resource implications.¹¹ TRADOC must receive additional support to expand service school training programs to the reserves to include weekend IDT training. The evidence suggests, however, that the TRADOC does not fully comprehend its training responsibilities to the RC of the Army. The Army Ordnance school initiative should be pursued because it provides the first concrete evidence that RC members can adapt to the Army's latest equipment at extremely low cost. This initiative is the basis for Proposal One in Chapter IV.

Materiel Development and Readiness Command

Initially, DARCOM seemed to be only a minor player in reserve force training. In discussions with RC unit commanders, however, and through visits to Letterkenny and Depot System Command (DESCOM) it was discovered that some units had sought assistance from the DARCOM depots that come under DESCOM. The study group found a major network of enthusiastic individuals and organizations providing significant assistance to units that had access to

their facilities. Although such programs were limited because of resources, they provided the much needed "hands on" aspect of training so severely lacking in today's system. This initiative is the basis for Proposal Two in Chapter IV.

Summary

Discussions with the various staffs and units throughout the Army suggest that training programs for reserve force maintenance are understaffed, lack central management, and have not been resourced. The study group concludes that major improvements in CSS mobilization readiness can be attained by properly marshaling active and reserve component facilities such as depots, schools, and full-time reserve equipment sites, and by promoting active unit associate programs. By integrating these assets along with a modest investment of resources, a mutually supportive infrastructure can be created.

TABLE 2-1

**MATERIEL REPAIR CAPABILITYARMY OF ARMY
NONDIVISIONAL MAINTENANCE COMPANIES**

COMPANY	TOE	MISSION
Light Equipment Maintenance Company, GS	29-134	Provides GS maintenance on communications, photographic, reproduction, survey, lighting, and air conditioning equipment; has limited parts supply capability; assigned to TAACOM or COSCOM and attached to Maintenance Battalion DS/GS.
Heavy Equipment Maintenance Company, GS	29-137	Provides GS maintenance on automotive and related items, combat vehicles, conventional artillery weapons and fire control systems, nonintegrated fire control instruments, construction equipment, materiel handling equipment, laundry and baking equipment, and fuel dispensing equipment; assigned to TAACOM or COSCOM and attached to a Maintenance Battalion DS/GS.
Forward DS Maintenance Company	29-207	Provides on-site DS maintenance in support of automotive and related items, artillery (conventional) weapons and fire control systems, small arms, nonintegrated fire control systems, communications construction, power generation, and air conditioning systems; has limited evacuation and repair parts supply support in corps service area; assigned to COSCOM and attached to a DS Maintenance Battalion.
Rear DS Maintenance Company	29-208	Provides supplemental support to Forward DS Company and on-site maintenance service to supported units when evacuation of heavy items is difficult; provides repair parts supply to supported units in a direct exchange systems (same basic mission as Forward DS Company); assigned to COSCOM and attached to a DS Maintenance Battalion.
Maintenance Company, DS (Nondivisional)	29-209	Provides DS maintenance and repair parts supply service to nondivisional organizational units in the corps area, support vehicles, engineer equipment, small arms, and canvas repair as well as refrigeration, communications and power generation equipment; will replace 29-207 and 29-208 in mid-1980s; assigned to COSCOM and attached to a DS Maintenance Battalion.

TABLE 2-1 (Cont¹)

COMPANY	TOE	MISSION
Maintenance Company, DS/GS	29-427	Provides DS and GS level support to units assigned to or passing through the COMMZ (same range of missions as the Rear DS Maintenance Company); assigned to TAACOM and attached to a DS Maintenance Battalion.

FIGURE 2-1

MAINTENANCE COMPANY LIGHT EQUIPMENT
NONDIVISIONAL GENERAL SUPPORT
(TOE 29-134H)

The nondivisional GS light equipment maintenance company (TOE 29-134H) provides general support maintenance for conventional light equipment, and items and components thereof; to include communications electronics, photographic, chemical and safety equipment; and laundry, food service, power generation, refrigeration, heating, topographic, and administrative support equipment. This company is normally attached to the GS maintenance battalion on the basis of area density. The organizational chart (below) depicts the structural configuration and support capabilities of this unit.

FIGURE 2-2

MAINTENANCE COMPANY HEAVY EQUIPMENT
NONDIVISIONAL GENERAL SUPPORT
(TOE 29-137.I)

The nondivisional GS heavy equipment maintenance company (TOE 29-137H) provides general support maintenance commensurate with capabilities for conventional heavy equipment and items and components thereof; to include automotive, armament, construction, materiel handling, instrument and fire control equipment, except aircraft, missile, ammunition, medical, cryptographic, marine, and rail equipment. The heavy equipment maintenance companies are attached to the GS maintenance battalions of the corps support groups; normally on the basis of area density. The bulk of the workload within the company is concentrated on automotive combat construction equipment, armament equipment, and components that require overhaul. The company workload will normally be received from the DS and collection and classification elements of the corps support groups as programmed and planned by the MMC of the COSCOM/SUPCOM. The organizational chart (below) depicts the structural configuration and support capabilities of this unit.

FIGURE 2-3

MAINTENANCE COMPANY
NONDIVISIONAL DIRECT SUPPORT
(TOE 29-209)

The nondivisional DS maintenance company (TOE 29-209) will replace the forward and rear DS maintenance companies (TOEs 29-207 and 29-208). This unit provides direct support (DS) maintenance and repair parts supply service commensurate with capabilities for nondivisional organizational elements of the corps area. Support assistance also includes limited vehicular recovery, a direct exchange, and an operational readiness float. The organizational chart (below) depicts the structural configuration and support capabilities of this unit.

CHAPTER III
CENTRALIZED PREMOBILIZATION TRAINING

Introduction

The study group focused primarily on ways to upgrade mobilization readiness through increased MOS proficiency. From the beginning, it was recognized that in the absence of definitive training policy and plans, some CSS maintenance units have developed MOS training programs that if implemented and resourced hold great potential. Observations and issues discussed in Chapter II caused the study group to adopt the following criteria when considering training solutions: (1) where possible a proposal should build on what was already successful in the field; (2) a proposal should be affordable in terms of equipment and instructors; (3) a proposal should not require drastic change in doctrine or unit structure to be effective; and (4) the present chain of command and control responsibilities would not be altered significantly.

The concepts outlined below suggest several proposals and programs that answer the questions of the amount of meaningful premobilization training that can be conducted at Army AC and RC installations and facilities; the activities that are best suited for this type training; and the major considerations in developing such a program.

Concept

Centralized Reserve Maintenance Training Centers

Within CONUS are many Army facilities capable of conducting some type of

RC maintenance training. Army service schools and installations, DARCOM maintenance depots, major FORSCOM installations, and full-time ARNG and USAR maintenance sites head the list. Figure 3-1 shows the locations of RC nondivisional maintenance companies. Figure 3-2 shows both RC maintenance company locations and major concentrations of AC combat equipment located at selected FORSCOM, TRADOC, and DARCOM installations. Figures 3-3 and 3-4 show the relative location of RC maintenance companies, ARNG Mobilization and Training Site (MATES), and USAR Equipment Concentration Sites (ECS). These figures (located at the end of the Chapter, pages 42-45) illustrate the difficulty imposed by geographic dispersion but at the same time indicate that many units are located near a potential training facility.

The basic thrust of the concept is that the Army should identify its training requirements in terms of needed facilities, training equipment and instructor personnel; should designate selected facilities as Centralized Reserve Maintenance Training Centers (CRMTC); and should align units according to deployment status and the availability of training facilities. Training would be conducted on weekends during IDT by TRADOC certified RC instructors supported, as required, by AC personnel. Instruction would ultimately be given on the entire spectrum of the Army's tactical equipment. Typically, the Army service school could be expected to have the latest equipment and instructors. Some service schools, however, are not geographically suitable, and branch orientation and weapon system proponency could limit their usefulness. A DARCOM depot could be expected to have qualified personnel and excellent facilities but might not be rebuilding the latest Army equipment.

For a full DARCOM program, the newest equipment must be provided. ARNG MATES and USAR ESCs have excellent facilities and an experienced full-time staff. RC full-time staff require instructor training and new equipment and training devices must eventually be programmed for such sites.

Initially, a designated CRMIC facility, such as a service school, maintenance depot, or RC maintenance site, would concentrate on MOS training specific to their normal maintenance or training mission. As the program expands, designated facilities would receive enough resources to teach the full spectrum of maintenance skills found in a typical nondivisional DS/GS maintenance unit. The advantage would be that reserve unit commanders would know where and what training facilities are available and could plan accordingly.

Unit Deployment Planning

Concurrent with Army planning for CRMIC facilities must be a review of RC nondivisional maintenance units: their location, capability, wartime mission, and deployment dates. The most important wartime mission or earliest deployment dates should be given to units aligned geographically with the best available training opportunity--at one or several facilities. For example, an HEM company located in Maryland or eastern Pennsylvania, with access to the Army Ordnance school (tracked and wheeled vehicles, artillery), Letterkenny Army Depot (artillery, radar, computers, air defense), and Tobyhanna Army Depot (communications/electronics) has an ideal training opportunity for weekend IDT at any of those facilities. All other factors being equal, this unit should have one of the earliest deployment dates upon mobilization.

Later, as the program expands, the Army Ordnance School could acquire the necessary training equipment to teach nearly all CSS nondivisional maintenance skills. The Ordnance School could then become the single IDT MOS training site for a large number of high-priority skills required in RC CSS maintenance units. Similarly, given the proper circumstances, an Army maintenance depot such as Tobyhanna, Anniston, or Letterkenny could exchange training equipment and provide a greater balance of maintenance training capability.

USAR and ARNG full-time maintenance facilities could become important training centers for a large number of maintenance units. They have excellent facilities, experienced personnel, and geographic dispersion similar to many RC maintenance units. They lack newer equipment. Inasmuch as all units do not deploy at once, however, RC maintenance facilities could be aligned initially with later deploying units that are more likely to be sustaining older equipment as first line equipment is attrited on the battlefield. For example, the RC maintenance units located in Kansas could train at the ARNG MATES at Fort Riley, but their deployment priority should not be the same as the unit training at APG Maryland. To enable RC maintenance CRMTCs to be fully operational on the Army's latest equipment, additional resourcing and instructor training similar to that required for the other CRMTC proposals will be necessary. Initial selection of RC based CRMTC is important. Only those centers most capable in terms of up-to-date equipment, facilities, and instructors as well as proximity to a high number of units or to populated areas that could support CSS maintenance units should be selected.

Role of the USAR School

Central to the concept is the close association of one or more USAR schools with one or more CRMICs. Currently there are ninety-six USAR schools in CONUS. Many of these schools are located near a potential CRMIC. By way of example, figure 3-5, page 46, shows the location of USAR Schools in First Army. USAR school instructors would initially complement and, in some cases, later replace active component personnel. The USAR school system is uniquely positioned to recruit, train, and coordinate instructor activities for all designated CRMICs. The highly successful association of the 2076 USAR School, Wilmington, Delaware, with the Army Ordnance School provides a model to follow. The 2076 USAR School, by virtue of being in the USAR administrative system, has successfully recruited up to fifty instructors for weekend IDT maintenance instruction at the Army Ordnance School. At the time of this report, thirty eight of the fifty instructors were certified under a TRADOC program sponsored by the Ordnance School.¹ Thus, a basic USAR school premobilization mission could be the development of a cadre of TRADOC certified USAR maintenance instructors for duty at CRMICs. Ultimately, formal association of specific USAR schools with selected Army CRMICs could help resolve the resource problem that now inhibits many RC training initiatives in the TRADOC service school system. Implementing of this concept would expand the Army's training base to the reserve forces. The USAR school could be the link to TRADOC for MOS exportable training products. The USAR school system could also function as an administrative bridge from the CRMIC to the reserve maintenance community and thereby reduce the RC overhead at the CRMICs.

An Integrated Regional CRMIC Program

The study group concluded that certain TRADOC, DARCOM, and USAR/ARNG maintenance/training facilities could be designated primary CRMICs because of their close geographical relationship to units and other CRMICs. Considerations included the kinds and types of available training equipment, the mission proponency of the potential CRMIC, and the accessibility of RC maintenance units to all or some of the CRMICs in the regional area. Thus, a concept evolved that recognized the fact that some CRMICs could be mutually supportive in terms of specific MOS training programs, resources, and administrative coordination. These regional areas, defined as a 200-mile radius of a primary CRMIC, have the capability of training the majority of the Army's early deploying units (figure 4-1, page 75). The regional areas do not necessarily correspond to any RC command and control boundaries. Baseline planning will be required to ensure that regionally designated facilities do not overlap or even underlap required MOS instruction. The concept is important to the other CRMIC proposals, because not all CRMICs will have to be fully equipped in order to be a part of the program. Although the eventual goal of any CRMIC is to be fully capable of training all nondivisional MOS, this approach will make maximum use of available equipment. The TRADOC service schools, because of their unique training capability, will play a key role in this program. Where necessary, however, CRMIC other than TRADOC can be selected. A notional concept is outlined as Proposal Four in Chapter IV.

Mission Focusing

A concept entitled "mission focusing"² is useful for the CRMIC pre-mobilization training concept. Mission focusing attempts to align certain unit mobilization readiness requirements; that is, equipment, training, spare parts, special tools, TMDE, etc.; on a specific weapon system. The rationale is that a unit would receive training on and be capable of maintaining a high-priority combat system.³ When applied to the CRMIC concept, where some facilities initially might have limited tactical systems available for training, nondivisional maintenance units could train on the equipment available.⁴ This procedure would help provide a start on minimum essential training.

A broader application of the mission focusing concept could also simplify the RC maintenance training problem of multiple MOSs and geographic dispersion. For example, maintenance company detachments or sections could be purposely located near a facility that is appropriate for training the skills needed in that detachment. The electronic maintenance section of a DS/GS maintenance company could be located, recruited, and trained near a facility having that training capability. The electronic maintenance section could belong organizationally to a parent company located elsewhere. This section would normally join its parent unit for AT. If located close enough, common subject IDT training with the parent unit would also be desirable. The concept recognizes the fact that some MOS individual skill training cannot be conducted in the parent unit location. Upon mobilization, the detachments could be combined into companies and the companies into battalions for deployment. The basic idea is the same: effective maintenance training must have facilities, equipment, and competent instruction.

Phasing

The centralized premobilization training proposals outlined in this chapter are highly desirable because they can be initiated quickly at relatively low cost. The first phase requires little more than baseline planning and policy implementation. Phase I determines the capability that exists on the ground today and aligns early deploying maintenance units with the closest available facility or group of facilities. These facilities would become the first CRMICs. For some units, the unit mission and deployment priority would immediately change. At the same time, USAR school alignments would be made and instructor certification programs initiated. Some IDT instruction could begin as instructor training programs designed to expand the basic proposals are implemented. As equipment, tools, and TMDE are made available, MOS training would be expanded. Some CRMICs would eventually have the capability to train all CSS maintenance MOSSs. USAR and ARNG facilities would be given current and up-to-date equipment. A fully mature program would align units and facilities on a priority basis, so that the earliest deploying units would receive the advantage of training on the latest equipment available. USAR schools would support the most critical units and facilities first and later expand to those facilities having a lower priority. Finally, units without access to a CRMIC would be redesignated.

Expanded Initial Entry Training

The RC nondivisional maintenance unit is expected, upon mobilization and deployment, to be capable of repairing the Army's most modern equipment. Tasks appropriate to the GS maintenance level, however, are no longer taught

during Initial Entry Training (IET) in the Army school system. Further, skill level one and two maintenance training, normally conducted during IET, has been reduced in length and scope to conform to TRADOC resources and Instructional Systems Development (ISD) models. ISD tends to organize training into job tasks at the expense of theory. In addition, many ISD programs of instruction relate to equipment unavailable to RC maintenance units.⁵ Skill level three training, normally conducted at mid-career, is not generally available to the reservists. At the end of a normal twelve-week IET period, therefore, RC maintenance personnel have been exposed to only the most basic level of formal maintenance training. TRADOC ISD instruction is designed to meet the needs of the active forces where follow-on maintenance training can be accomplished in the unit.⁶ Expanded IET is the first step in rectifying the RC maintenance training shortfalls discussed in this study. To be effective, there must be clear recognition on the part of the Army that the initial training period provided the maintenance reservist is inadequate. Expanded IET is the first step all other proposals presented in this paper will build on. Under the concept, reservists who will be serving in RC nondivisional maintenance units would be provided extended formal follow-on training after their Advanced Individual Training (AIT). This follow-on training will serve several important purposes. First, it will allow needed individual MOS training to continue on a formal basis without interruption to the end of the six-month active duty obligation. Follow-on training should emphasize technical theory applicable to most equipment in the hands of the active forces. A longer period of IET is attractive, because it requires the least change to existing Army school curriculum, and builds from the technical base of AIT. Expanded IET would provide the basis for a fully sustained

program conducted during IDT. No change is required in existing law, which already permits the six-month active duty period. Some additional TRADOC instructor and training developer spaces would be required, however, to support the program. Some of these needed resources could be provided by the USAR school system under this concept.

Weekend Inactive Duty Training (IDT)

For individual members of high priority units who have recently completed the proposed six-month Initial Entry Training (IET) period, continued formal weekend training on current and newly fielded combat systems is critical. Normally, several years are required before GS level skills are obtained. For the senior reservist, the reservist transferring from another unit, or a unit mission change to a maintenance unit, weekend IDT training would serve to change to new tactical systems. For most maintenance unit members, weekend IDT periods at a location where equipment and instruction are available would become the recognized method of sustaining MOS skills. Weekend programs should be structured to the specific needs of the individual and the mission of the nondivisional maintenance unit. For example, some instruction on newer systems should be given in terms of GS level skills and should be designed for more advanced senior GS maintenance personnel. Courses specifically targeted to the RC maintenance supervisor would have a high payoff in terms of wartime readiness. In the event of mobilization, the RC maintenance supervisor must be current on the Army's combat systems.

Weekend training programs would be based on a minimum of twelve hours of instruction each month (8 hours Saturday, 4 hours Sunday, with travel on Friday and Sunday afternoons). Typically, an IDT maintenance training program could last from four to eight months annually (48 to 96 hours) in order to accommodate a variety of training programs. The remaining IDT periods would be given over to common skills or other unit training. Generally, the more complex the skill or the lower the skill level of the soldier, the higher the number of weekend IDT periods. To be effective, IDT at an Army service school or some other comparable CRMTC facility should be a matter of policy, particularly for early deploying maintenance units. Today most IDT training periods are of short duration with uneven results. IDT weekend training as indicated in this proposal must be conducted frequently enough to provide sustainment throughout the individual's Army service. The unit commander, based on the results of an annual evaluation program, would determine the exact number of IDT periods for maintenance training required of each soldier. The unit commander should be confident that such training is in his own interest as well as that of the unit. Most important, an annual evaluation of individual skills conducted during AT should be the basis for such training. The AT evaluation proposal is outlined later in Chapter IV.

FIGURE 3-1
**NONDIVISIONAL USAR AND ARNG COMBAT
SERVICE SUPPORT MAINTENANCE UNITS**

RC UNIT LOCATIONS
FORSCOM POSTS
TRADOC POSTS
DARCOM INSTL.

SOURCE: ARMY GREEN BOOK 1982-83

FIGURE 3-2

SELECTED FORSCOM, TRADOC, AND DARCOM SITES
WITH LARGE CONCENTRATIONS OF EQUIPMENT
(FIGURE 3-1 CSS MAINTENANCE UNITS SUPERIMPOSED)

KEY

MATES
RC MAINT. UNIT

FIGURE 3-3

ARNG MAINTENANCE AND TRAINING
EQUIPMENT SITES, (MATES)
(FIGURE 3-1 CSS MAINTENANCE UNITS SUPERIMPOSED)

KEY

ESC
CSS MAINT UNIT

FIGURE 3-4

USAR EQUIPMENT CONCENTRATION
SITES, (ECS)
(FIGURE 3-1 CSS MAINTENANCE UNITS SUPERIMPOSED)

FIGURE 3-5
SITES OF FIRST ARMY USAR SCHOOLS

CHAPTER IV
PREMOBILIZATION TRAINING PROPOSALS

The premobilization training proposals described in this chapter are a more detailed description of the basic training concept described in Chapter III of this study. There are several reasons for the rather detailed discussion in this chapter. The first three CRMTIC training proposals are conceptually similar. The fourth proposal is a refinement of the three CRMTIC proposals and adds a regional training perspective to a basically straightforward RC premobilization maintenance training program. The fifth proposal, an annual evaluation program, builds on current practice with regard to AT. Each CRMTIC proposal, if implemented alone, would, add significantly to RC CSS wartime maintenance capability. It would then be simply a matter of which and how many units would be able to receive enhanced premobilization training. It is important, then, that both the potential and the differences of each proposal be outlined by the reader and evaluated. Discussion of the separate proposals helps the reader to better understand the strengths and weaknesses of selected activities. Obviously, there is more capability in some MACOMs than others. Certainly this is true of specific schools, installations, and depots. Although the recommended proposals provide training alternatives for consideration, detailed, specific programs are avoided. Only an exhaustive baseline study of Army maintenance capability will provide the basis for the conceptual program. Such a project was well beyond the scope of the paper. One of the outstanding contributions of this study is its conceptual approach and versatility. Where it is felt more explanation is required, notional examples are used to help demonstrate the usefulness of any proposal.

The study group strongly advocates an approach that would involve the entire army. All MACOMs have important assets which must be used if the program is to be successful. There is one exception. A proposal that places the burden of CRMIC support on an active Army division was considered impractical. CONUS Army divisions have enough training detractors without adding to their burden. Training the RC is not their mission, despite pleas that they have equipment and instructors. There is adequate capability elsewhere. The solution lies squarely on FORSCOM RC full-time maintenance activities, DARCOM maintenance depots and the TRADOC training base.¹ The five proposals would place the TRADOC back in the lead as the Army's individual trainer, while at the same time retaining the overall responsibility of FORSCOM for RC training. The role forecast for DARCOM recognizes the potential of programs that exist today and are compatible with the depot level maintenance mission.

Proposal One

Inactive Duty Premobilization MOS Training at Army Service Schools

Army service schools, supported by the USAR school system, conduct 2remobilization Inactive Duty Training (IDT) for personnel of high-priority early-deploying Reserve Component (RC) maintenance units. All Army service schools, regardless of CRMIC status, provide proponent training materials for the conduct of Army-wide CRMIC maintenance training. This section will outline a method for training critical skills at selected Army service schools where competent instruction can be given on the most current models of combat equipment and training devices available.

Concept

The Army service school is uniquely positioned to respond to current RC nondivisional premobilization maintenance training needs. Service schools have the latest models of equipment, the best instruction programs, and the most adequate facilities for weekend instruction.

Under this concept, selected Army service school facilities and equipment would be designated Centralized Reserve Maintenance Training Center (CRMIC). Service school CRMICs would be made available to reservists on weekends and, when circumstances dictate, for extended periods of up to two weeks corresponding to the annual training requirement. Programs of Instruction (POI) and designated resources could be integrated with an expanded IET program. Instruction would be provided by Army service school instructors augmented by USAR school instructors as the program expands.

Development of a Service School CRMIC Program

Phase 1 HQ TRADOC designates the Armor, Infantry and Ordnance service schools as CRMICs. The Ordnance school is tasked to provide training materials for CMF 63 MOS instruction.² The Army Ordnance School has conducted weekend IDT training and provided training materials for reserve maintenance personnel on a pilot program basis since 1981. USAR schools providing TRADOC CRMIC support are designated. USAR school instructors are recruited, and training programs for instructor certification at TRADOC CRMICs are initiated. FORSCOM identifies CSS nondivisional maintenance units that can immediately train at the above CRMICs. CAPSTONE planning provides new

deployment data based on the above enhanced training capability. Initial POI emphasize a multisystem approach to maintenance based on the Infantry Fighting Vehicle, M-1 Tank, DIVAD Gun, Multiple Launch Rocket System, and Improved Tow Vechicle. POI would emphasize the training transfer aspects of these systems. The Ordnance School will provide artillery maintenance training, and later this capability would be added to the Armor and Infantry Schools. Inasmuch as the above schools have a limited communications maintenance capability, the Army Signal School would be tasked to develop a POI and identify equipment needs. Early coordination begins with FORSCOM and DARCOM in regard to their facilities located within a 200-mile radius of the TRADOC schools. The goal is a regional alignment of training responsibilities covering all possible MOSs and a wide range of equipment.

Phase II The Missile and Munitions School, Redstone Arsenal, Alabama, and the Signal School, Fort Gordon, Georgia, are added as CRMICs. All five TRADOC CRMICs have instructor training programs now ongoing for USAR school personnel. Major items of equipment necessary for full programs at the TRADOC CRMICs are identified and provided. In cases where equipment is not provided, a suitable alternative such as another CRMIC site is identified and resourced. The Signal School initiates an RC instructor training program for signal MOS instruction at the Armor, Infantry, and Ordnance CRMICs. DARCOM and RC full-time maintenance CRMICs located near the above service schools integrate respective programs.

For certain weapons systems where instructional responsibility is not clearly defined, instructional realignment would be accomplished as appropriate. For example, consideration could be given to providing an Air Defense System repair capability at the USAMMS and at the co-located Redstone Arsenal (MICOM) facility based on MICOM's Air Defense repair capability. The USAMMS would represent the USAADS, Fort Bliss, and TRADOC interest in the MICOM effort. The MATES located at Fort Knox and Fort Benning should be fully integrated into the TRADOC CRMIC program by the end of this phase.

Phase III TRADOC, DARCOM, and FORSCOM make final CRMIC decisions based on ongoing programs and individual MACOM capability. FORSCOM AT evaluation programs are finalized. Some CSS maintenance units that now train at several CRMICs, because of limited available training at a given site, will be able to train at one CRMIC because of increased capability. CAPSTONE alignments are finalized and deployment dates adjusted based on the degree to which units can effectively train their unit members.

Mission Focusing and Service School Propriety

The service school proposal is extremely cost effective when other measures are considered, even assuming that a number of service schools will be provided the necessary equipment for expanded programs. In those instances where the service school equipment or propensity is very limited (such as at the Army Air Defense or the Army Signal School), selected units could still train effectively on available equipment. The unit would then be "mission focused" on those MOSs for which the service school is capable of providing

instruction. Other alternatives, such as the use of CRMICs other than TRADOCs, would have to be devised to provide training for the balance of the unit's MOSSs. Mission focusing, if modified properly, could be a useful adjunct to the service school program and could provide flexibility to the service school option.

Resources

TRADOC, based on input from FORSCOM, would establish the service school resource requirements in terms of spaces and dollars. The RC maintenance requirement should be a formal part of the TRADOC resource contract with the designated Army service school. This would include trainers as well as training developers. Some USAR assets should assist in the vital training development role. USAR school assets would be delineated in a memorandum of understanding between TRADOC and FORSCOM. In turn, HQDA would determine what proportion of the RC budget and manpower spaces would be required to reimburse active Army accounts. RC student load figures and other normal means of resource determination would be used to establish resource levels.

Conclusion

This proposal requires the Army to recognize the potential and the responsibility of the active Army service school to train CSS RC personnel for an immediate wartime mission. The Army service school proposal is based on the premise that the Army's latest training equipment and instructors can be

brought together in a centralized location at relatively low cost. HQDA and FORSCOM planners, in coordination with TRADOC, should develop the CAPSTONE priority deployment list based on the ability of a RC nondivisional maintenance unit to avail itself of centralized training.

Proposal Two

Inactive Duty Premobilization Training at Army Depots

Army maintenance depots and depot activities, supported by the USAR school system, conduct premobilization Inactive Duty Training (IDT) (MOS transition and sustainment training) for personnel of high-priority early-deploying Reserve Component (RC) maintenance units. This section will outline a program for premobilization MOS training at selected DARCOM depots where formal instruction and extensive on-the-job training programs can be accomplished on current models of combat equipment. As the program expands, such training can be conducted on the latest equipment in the Army inventory. This concept can readily be integrated into the area management structure identified later in this chapter as Proposal Four.

Concept

The Army depot maintenance system has a demonstrated capability to conduct QJT programs for reservists during weekend IDT on current models of equipment.³ Under this concept, selected Army depots using equipment undergoing repair in their respective "center of excellence"⁴ (artillery, infantry fighting vehicles, communications equipment) would provide formal MOS training

to RC maintenance personnel. USAR school instructor personnel and TRADOC developed training materials would be made available to help provide formal classroom and QJT instruction on current combat equipment. Current combat equipment as defined here is that equipment now in the active force and, to some degree, in RC units. When expanded and properly resourced, the program will include instruction on the latest equipment in the inventory at selected depot maintenance facilities. Instruction will normally be provided by depot civilian personnel on an overtime basis. Reservists who work at the facility can also provide instruction and at the same time receive IDT credit. USAR school instructors certified by the TRADOC school system will also conduct training as required for the program. The advantages of this concept are the availability of a wide variety of current generation combat equipment and a large pool of experienced maintenance personnel who can provide skill level one, two, and three sustainment and transition training. The biggest disadvantage is that under the "center of excellence" concept a depot normally provides repair to only a portion of the Army's inventory. Thus, facilities, equipment, and instructors are not available at any depot for all MOSs requiring training in a DS/GS maintenance unit. The DESCOM Army depots, as major contributors to this centralized training concept, will be candidates for designation as Centralized Reserve Maintenance Training Centers (CRMTC) and will participate in the program to upgrade DS/GS RC nondivisional units to a deployable wartime status. They may also be a supporting element of a regionally managed training area.

DESCOM Support

Currently, except for a small pilot program at the Army Ordnance School, there are relatively few places other than the Army depot system where nondivisional maintenance personnel can receive "hands on" transition and sustainment training on current combat equipment. The DESCOM activity located at Letterkenny Army Depot currently is providing limited MOS training to RC units on an individual unit basis.⁴ DESCOM recognizes its unique ability to support the RC maintenance units and has stated its capability of training reservists in fifty-five maintenance skills.⁵ An analysis of the effort indicates that with modest investment, the program could be formalized and eventually expanded so that several, and perhaps all, depots would have the capability to instruct a large percentage of the skills now required in an RC non-divisional CSS unit.

Training Capability. During FY 1983, fourteen RC (USAR and ARNG) units are programmed to utilize Tobyhanna Army Depot (TOAD) facilities for weekend IDT training. Units represented range from division artillery to individual maintenance companies. The average number of personnel from any unit is about thirty individuals. Of fourteen units planning to train at Tobyhanna, one will train there only once. One unit, an engineer battalion, plans to train nine different weekends in FY 1983. If all planned slots are utilized, this unit will consume 630 person-days of training. The fewest person-days that any unit plans to spend at Tobyhanna is seventy-eight. If all the units scheduled for

weekend maintenance training do train as planned, they will utilize more than 2,500 person-days training time. Generally, units undergoing maintenance training at Tobyhanna plan to travel to the depot three to four times during FY 1983.6

According to a DARCOM publication, Tobyhanna Army Depot alone can provide training for thirty Career Management Fields (CMF) representing approximately 110 separate enlisted MOS.7

Categories of Training. Run in DESCOM is particularly adapted to supporting two aspects of training: transition and sustainment.

Traisition Training. Transition training is that additional training required to bring MOS qualified personnel to the enhanced level of proficiency necessary to maintain new or older tactical systems displaced from AC units. In those cases where RC unit personnel cannot return to the proponent TRADOC school for formal transition training, DESCOM should be capable of accomplishing this aspect of training on an IDT basis. The magnitude of transition training must not be underestimated, however. Appendix E compares relative time required to train AC and RC mechanics. The need for TRADOC to produce exportable training packages that focus on the minimum essential tasks necessary to qualify personnel on a new system cannot be overemphasized.8 This is a vital requirement during this period of intense Force Modernization.

Sustainment Training. To maintain and enhance the skills acquired during transition training, it is essential that CSS maintainers periodically return to the classroom and laboratory environment. An update is especially important if the RC unit does not otherwise have access to its wartime mission equipment. Sustainment training programs should be flexible and tailored to the specific needs of the individual as determined by the commander's evaluation and previous training. In the case of personnel with critical low-density or highly specialized MOSs, it is expected that they will spend the vast majority of their IDT time at a depot maintenance facility.

Mission Focusing and the Center of Excellence Concept

The DESCOM "center of excellence" concept generally focuses expertise, equipment, and facilities for a particular weapons system or piece of equipment in one, or perhaps two, depots. (See Appendix H.) Although efficient for depot management, this system limits the capability of any given depot to train the multiple MOSs found in a DS/GS maintenance unit. As an initial step, RC CSS maintenance units located within an acceptable training radius of a given depot of 200 miles could be mission-focused on skills capable of being trained at the facility.

To facilitate this approach, CAPSTONE planning should take into account the mission focus of the unit; and the unit should receive early distribution of spare parts, special tools, test sets, and manuals for these systems as part of the mission focusing effort.⁹

As the program expands, additional training materials would be provided to include the latest equipment in the Army inventory. Such a program should be given high priority at those depots servicing major combat vehicles and communications equipment. Even one or two such CRMICs with an appropriate number of maintenance units aligned for training purposes would greatly enhance the overall training posture of the RC maintenance units.

Resources

Utilization of the existing DESCOM facilities takes maximum advantage of the resources available and is a cost-effective methodology for meeting the training shortfall. With some added resources, the DESCOM system can provide the training staff, physical facilities, and access to the ever larger inventory of wartime mission equipment required to train RC personnel. It can also be readily adapted to the integrated regional training program suggested under Proposal Four.

Training staff. The DESCOM cadre of maintenance personnel has the knowledge and experience to repair virtually any end item in the Army inventory. It has already been demonstrated that with additional training many of these individuals can be effective instructors. There are some special considerations related to the use of these in house instructors:

1. Additional funding will be required to support weekend instructor personnel.

2. Staffing augmentation will be required to offset shortfalls.
3. Labor union concerns will have to be addressed and resolved.
4. USAR school instructors and skilled RC unit members can augment the depot training staff.

Facilities. Existing facilities at DESCOM sites may require augmentation as the programs grow. Initially, however, most depots have sufficient classroom and shop areas to provide an adequate training environment. Where shortfalls do exist, local reserve centers or armories should offer the extra space required, especially to satisfy classroom and billet requirements.

DESCOM depots that serve as mobilization sites should justify additional construction with the rationale that additional billets, dining halls, etc., needed for RC training will also be required to meet mobilization needs. HQDA emphasis will be needed to promote additional resources for this type of expansion. During initial phasing in of a depot training program, however, there should be sufficient capacity at any depot that is likely to be selected for this program.

Equipment. The effectiveness of the DESCOM training program depends on the availability of equipment, subassemblies, mock-ups, and training simulators. Based on TRADOC Program of Instruction (POI) requirements and training site density, DESCOM will be responsible for the procurement of all equipment including TMDE and special purpose tool sets.

Conclusion

This proposal must be considered within the larger framework of the Centralized Reserve Maintenance Training Center (CRMTC) concept and the integrated regional training program that includes the Army service school and reserve maintenance sites (as discussed in other segments of this chapter). Because of the inherent geographic dispersion that affects both nondivisional units and the depot system, the Army should avoid placing all the training burden on the depot system. The task must be shared where possible throughout the Army. DS/GS units should be aligned only with those facilities that can best service their training needs. At the early stages of this program, when Army depots are somewhat limited in training capability because of their "center of excellence" concept and when the latest equipment has not yet entered the depot system, CAPSTONE deployment priority should go to units that have ready access to depots or other CRMTC that have more current equipment. Such units should be aligned, within training distance constraints, to as many CRMTC facilities as possible. Later, as the program develops, a single CRMTC or a regionally managed program should be able to provide skill training across the broad spectrum of maintenance MOSs.

Proposal Three

Inactive Duty Premobilization MOS Training at RC Full-Time Maintenance Facilities

Utilize the Army National Guard (ARNG) and Army Reserve (USAR) full-time maintenance facilities and personnel in the Centralized Reserve Maintenance Training Center (CRMTC) system for the premobilization individual skill MOS training of early deploying RC nondivisional maintenance units.

Concept

Selected RC full-time maintenance facilities, such as ARNG Mobilization and Training Equipment Sites (MATES) and Combined Support Maintenance Shops (CSMSs), and USAR Equipment Concentration Sites (ECSs) and Area Maintenance Support Activity (AMSAs), would be given an additional requirement to provide MOS transition and sustainment training for nondivisional maintenance unit personnel during weekend IDT training periods. Personnel would train initially on equipment now available. As the program expands, selected AC current inventory and new tactical equipment and suitable training devices would be provided along with necessary special tools, TMDE and training manuals. Instructors would be provided for IDT training by a NGB Additional Training Assembly (ATA) type program using experienced full-time personnel from ARNG and USAR organizations. USAR school instructors would augment the full-time staff as required.

ARNG and USAR Support

The ARNG and USAR full-time maintenance organizations and co-located RC units have a proven capability to maintain combat vehicles and other tactical systems that they have been assigned to support. The effectiveness of these organizations and units has been established by consistently successful AGI staff inspections and Command Maintenance Evaluating Team (COMETS) reports of the maintenance in supported units.¹⁰ The USAR has 25 ECSs and 140 AMSAs. The ARNG currently has 22 MATESs and 66 CSMSs.¹¹ These RC facilities are extensive and well equipped with test equipment and tools, and they have

experienced full-time personnel. The full-time RC maintenance personnel are also responsible for the training of the M day soldiers who are members of the co-located parent maintenance unit.

The full-time RC maintenance facilities selected for the maintenance training mission would become part of a comprehensive CRMIC system that may also include Army service schools, DARCOM depots, and other AC facilities. Selection of a specific RC facility would depend largely on its geographic location, density of nondivisional units within a 200-mile radius, and the capability of the facility. Also, the RC maintenance facilities chosen should be responsible for the widest possible range of tactical equipment.

The use of RC full-time maintenance facilities has four major advantages: (1) geographical dispersion roughly comparable to the dispersion found for nondivisional maintenance units; (2) established organizations with well-equipped facilities; (3) the availability of experienced maintenance personnel for IDT instructors; and (4) the opportunity for a phased approach to the identified maintenance training shortfalls. The major drawback to the program, particularly in the earliest phases, would be a lack of current tactical equipment now in the active force.

A phased approach would permit almost immediate and effective individual skill MOS training on older combat vehicles for early-deploying units that are presently not receiving such training. The lack of AC current equipment would affect the level of instruction because it could be expected that the instructors available would be experienced on the older tactical vehicles and equipment.

Resourcing and Implementation

The program would begin by the identification through CAPSTONE of early-deploying nondivisional RC maintenance units. The CAPSTONE mission then would be further evaluated to determine the optimum alignment of units that would benefit from IDT and planned individual MOS training. As units are aligned and wartime requirements identified, full-time maintenance facilities would be selected to receive necessary equipment, training devices, shop manuals, and instructor training to accomplish the new training tasks. Additional funding to pay for instructor time on weekends would have to be provided as well. In the event that just a few RC maintenance facilities are selected for the full program, other RC maintenance facilities could be designated for less ambitious "starter" programs on older tactical equipment.

Almost immediate improvement in the readiness of some early-deploying units could be achieved by a CAPSTONE evaluation and the subsequent redesignation and/or realignment of RC nondivisional maintenance units that are co-located with the full-time RC maintenance facilities. The ARNG has a parent organization co-located with each of the 88 MATESSs and CSMSSs, and most are maintenance units.¹² Many of these units, however, are late-deploying organic DS or DS Forward maintenance units. Full-time ARNG and USAR maintenance facilities can be used in the CRMIC concept as an excellent training center for premobilization MOS training of RC maintenance personnel.

They have the proven capability and experienced maintenance personnel to provide training on Army tactical equipment. The analysis of the Fort Pickett, Virginia, MATES operation (appendix G) provides an excellent example of facilities that are available.¹³

Proposal Four

An Integrated Regional Training Program

Based on geographical locations, the capability of MACOM training facilities, and RC maintenance unit dispersion and density, develop an integrated CRMIC program that combines the training assets of several CRMICs. The goal of this proposal is to provide the maximum training opportunity to as many high-priority RC maintenance units as possible at the lowest possible cost.

Concept

From a planning and resource perspective, there is a logical basis for grouping potential maintenance training assets that are capable of providing all or portions of an RC premobilization maintenance training. This concept proposes the development of a regional training perspective that centers primarily on selected TRADOC service schools and their USAR school counterpart. TRADOC service schools have the basic mission of providing individual training to the Army. In this role, TRADOC is expected to provide

proponent training materials and other support to the RC training system. Basic to the three previously discussed CRMIC proposals is the need for the TRADOC service school to provide training support to all CRMICs. By expanding on this philosophy, it is logical for the TRADOC service school to act as the primary or lead CRMIC in a given region. The capabilities of other CRMIC, DESCOM depot, or RC maintenance element located in the region would be considered in developing the concept. In the case of the Far West, where a suitable TRADOC school does not now exist, another type CRMIC would be designated as the primary regional facility.

The region is defined as the area within a 200-mile radius of the designated regional CRMIC, which equates to the maximum distance (time) an RC member can efficiently spend traveling to a proposed training site.

The designation of a primary CRMIC does not diminish the role of other CRMICs located within the 200 mile radius. A supporting CRMIC might not, however, have the same priority for equipment and other resources as a primary CRMIC, but the goal is to use all available resources.

An Integrated Program

In developing this concept, consideration is given to designating the following sites as the regional CRMICs:

1. The Army Ordnance School, APG, Maryland (TRADOC)
2. The Army Infantry School, Fort Benning, Georgia (TRADOC)

3. The Army Armor School, Fort Knox, Kentucky (TRADOC)
4. The Army Signal School, Ft Gordon, Georgia (TRADOC)
5. The Army Missile and Munitions School, Redstone Arsenal, Huntsville, Alabama 14 (TRADOC)
6. Fort Irwin, California 15 (FORSCOM)
7. Camp Roberts (MATES) California (ARNG)

The following notational example, by region, illustrates how this concept would operate.

Northeast. With the Ordnance School (all tactical systems) acting as the lead CRMIC, units could receive training at Tobyhanna CRMIC (communications, electronics) and Letterkenny CRMIC (tracked vehicles, air defense, artillery). ARNG MATESS and USAR ESCs in vicinity of above CRMICs initially support programs as permitted by their capability. Selected MATESS and ECSSs would gain full CRMIC status as the program expands. An estimated nineteen RC maintenance units are capable of obtaining instruction at some CRMIC in the Army Ordnance school regional area.

Southeast. Collectively, Fort Gordon, Fort Benning, Anniston depot, the Missile and Munitions school, and Redstone Arsenal have a vast amount of training assets. There are ECSSs at Fort Stewart and Fort Benning and ARNG MATES facilities at Fort Benning, Fort McClellan, and Fort Gillem (Atlanta) Georgia. An estimated twenty RC nondivisional maintenance units are located in the vicinity of Fort Benning and Fort Gordon. The high number of units and the diversity of the potential CRMICs located in this zone provide a

particularly important opportunity for training. Numerous DS divisional support units are in this area, some of which could easily be converted to nondivisional units if necessary.

Midwest. Fort Knox and Lexington-Blue Grass Army Depot supported by Fort Knox MATES and ECS. Presently, five RC nondivisional maintenance units are in this area capable of receiving some portion of their training at these CRMIC facilities. Six more nondivisional units are located just outside the region. Many divisional DS units in the area, however, could be converted to nondivisional units if needed in the force structure.¹⁶

West. The Fort Irwin installation and the Fort Irwin MATES and ECS make up the Los Angeles area CRMIC complex. Seven RC nondivisional maintenance units located in Southern California would be able to train at these facilities.

Camp Roberts and the Camp Roberts MATES and ECS would comprise the Northern California region CRMIC. Between the two regions nearly all the RC nondivisional maintenance assets in the states of California and Nevada (12 units) could be trained.

Conclusion

Organized and developed to conduct and support training, TRADOC installations provide a logical focus for managing and resourcing the training assets of selected (non TRADOC) facilities within a 200-mile radius of

designated TRADOC service schools. TRADOC is directed by mission to provide facilities, equipment, and instructors in support of RC training. This proposal suggests that selected major TRADOC schools provide greater leadership and training support to RC nondivisional maintenance personnel on a regional basis in addition to the normal school program. TRADOC efforts to manage and conduct the training program are supported by designated facilities and organizations within a specified geographical area. By focusing the training management responsibility, in this instance with the Army's trainers, more efficient use of equipment and manpower can result. Figure 4-1 on page 75 depicts the regional CRMTC areas for consideration. Appendix D presents a possible phased scenario that would establish the premobilization training concept. The regional aspect of the CRMTC proposal is a unifying principle and should be part of the early baseline planning and programming of CRMTC resources, instructors and other assets.

Proposal Five

Association of Reserve Component Maintenance Units With Active Army Units

RC nondivisional maintenance units and active Army maintenance units jointly conduct training evaluation exercises during AT in order to evaluate the units' ability to perform their wartime missions. This section will

outline a program for associating Active/Reserve maintenance units to accomplish a more meaningful training evaluation. The unit training evaluation should be phased into the program only after individual MOS proficiency is sufficiently high in the unit to justify such a program. MOS proficiency is expected to be achieved by the previous proposals.

Concept

Active Army maintenance units are engaged in mission training as part of their normal training program. Reserve Component units have been frequently aligned with a corresponding active unit for training evaluation during AT. Although there are currently several active/reserve training programs and associations in the Army, few are designed for the specific purpose of evaluating RC DS/GS maintenance units readiness for mobilization and wartime missions. Where such programs do exist, they depend largely upon the individual initiatives of the RC and AC commanders involved. There is no formal, structured AT program anywhere in the Army designed to measure unit MOS proficiency and at the same time exercise the wartime capabilities of RC nondivisional maintenance units.

Under this proposal, active Army units would provide, insofar as possible, a realistic high-intensity maintenance environment that would test the units' ability to collect, test, repair, and return to battle the Army's currently fielded tactical equipment. Basically, the entire AT period should be a modified Army Training and Evaluation Program (ARTEP) designed to test individual maintenance skills as well as help the unit diagnose and correct

other unit weaknesses. Such an action would assist in the development of a realistic annual training plan. Whereas the entire unit would undergo evaluation, MOS proficiency would be emphasized. Previous sections of this chapter discuss methods for conducting individual skill training during IDT, so AT evaluation programs would serve to complete a normal training cycle. Although the study group believes formal MOS evaluation during AT is important to all CSS maintenance units, the program could be administered initially only to the highest priority units having the earliest deployment dates under CARSTONE.

Active Army Support

The ability of an RC maintenance unit to perform its wartime mission in an effective manner requires that the types of equipment that the unit will repair during war be identified and that effective "hands on" training be provided. Another basic requirement is that the RC maintenance unit know the vertical and lateral organizational relationships that exist in a wartime scenario. An evaluation period focusing on these factors would enhance peacetime training plans by enabling the RC commander to know the type of units he would support in wartime as well as the composition and capabilities of the higher level organizations to which he belongs.

A modified ARTEP designed to test individual and unit wartime mission skills would be conducted during annual training and would give the unit commander a measure of his success. Given the complexities of today's Army structure, the RC maintenance unit commander often does not know the

procedures, types of tools, TMDE, or even the types of equipment that his unit will be required to support in wartime. Very often he may not even know the types of units that he will be supporting. Most significantly, he often does not know the capability of his unit to perform its wartime mission. Without this knowledge, it is difficult to conduct meaningful IDT or AT premobilization training.

Reserve Component/Active Army Association. The phrase "Association of Reserve Component Maintenance Units With Active Army Units" is being used in this report to avoid confusion with terms such as "Roundout," "Affiliation," "Partnership," and "CAPSTONE," which have been used for years to describe other types of RC/Active Army relationships. "Association" in this context means any relationship between RC and AC units that focuses on wartime mission requirements, and specifically premobilization training evaluation.

An effective AT association of RC and AC units must include the relevant factors of availability of equipment on which to train or be tested; suitable locations for training; availability of tools, test equipment, and publications; and knowledgeable instructors and evaluators for those being trained and/or tested. The association need not be with like-sized RC and AC units, but should be with an active unit that has sufficient resources to manage the AT evaluation program.

The ideal situation, however, is for the RC unit to conduct AT with a unit that knows and appreciates the problems of a nondivisional maintenance unit. Such an appreciation would enable the active unit to set up training

conditions that will accurately test and evaluate the RC unit. AT for DS/GS maintenance units should exercise all maintenance sections and MOS. One of the more effective methods would be to have the RC unit participate in a major field training exercise (such as "Gallant Eagle") where the scenario and types of equipment to be repaired are nearly the same as the unit would encounter in war. Such an exercise would give the RC unit the opportunity to train with and be evaluated by like units with which they would deploy and would give it experience in operating procedures under simulated battle conditions. It is recognized, however, that such opportunities are limited. Normally, AT will be conducted at an Army FORSCOM installation where divisional equipment would serve to test the units ability to maintain wartime equipment.

When the RC units go to AT, individual maintenance training should be emphasized. Too frequently an inordinate amount of RC training during field exercises is spent on tasks that are unrelated to maintenance. Most of the so-called "basic soldiering" types of training could be evaluated only insofar as they relate to the conduct of ARTEP or an FTX.

Resources

Adoption of a formal association program by the Army could be done with little realignment of current resources. The CAPSTONE program should be reviewed in order to have RC maintenance units associated with active Army units similar to the RC unit in organizational function and mission. This suggestion does not conflict with earlier CAPSTONE alignment proposals.

Conclusion

Perhaps the most important factor in an effective association program is that active Army CSS units must be given, as one of their primary missions, the training responsibility of their counterpart Reserve Component units. The AC unit also should participate in the planning of the units' IDT training program. If these two requirements are not clearly spelled out, other AC missions may interfere, and results will not be first-rate. This proposal requires a change in thinking and practice toward the AT period of many RC maintenance units. More emphasis must be placed on maintenance MOS testing and evaluation during AT so that a better idea of the unit's real mission capability can be developed.

FIGURE 4-1

**PROPOSED CRMIC AREAS SHOWING PRIMARY
AND SUPPORTING CRMTC AND RC CSS NONDIVISIONAL
MAINTENANCE UNITS IN THE AREA**

CHAPTER FIVE

SUMMARY

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This study has identified a serious shortfall in reserve training with respect to the wartime mission readiness of Reserve Component nondivisional maintenance units. This readiness shortfall is important because it occurs at a time when AC force changes have reduced the Active Component maintenance capability and the process of Force Modernization has greatly increased the numbers and types of complex weapon systems. The study conclusions focus on the need to actively promote and develop an RC CSS maintenance training base. Decentralized unit training was found no longer to be compatible with today's mobilization concepts.

The means to correct the situation exist on the ground today and at relatively low costs. In essence, this study identified maintenance training capabilities across the entire Army. The study packaged these diverse capabilities into training components, called CRMICs, then integrated them into a unifying concept by combining both facilities and units into regional areas. Whereas an integrated regional program is a goal, it depends on the building blocks of the three separate CRMIC proposals. Planning analysis and evaluation should go into the regional concept.

The study challenges the Army to inventory its maintenance training capability and provide the coordination necessary to effect change. The study suggests that actual CRMIC implementation be phased, primarily because a few

early management actions could have an immediate and positive impact. Phasing would also help avoid crash programs and a needless waste of resources. The first phase is a modest realignment of units, CAPSTONE priorities, and available facilities. The second phase will require the resources needed for minimum essential readiness.¹ The third phase expands the program beyond minimum readiness and seeks to provide enough training capability for CSS maintenance units to ensure success under the most demanding wartime scenarios.

Findings

The study group's analysis produced the following findings that highlight the seriousness and extent of the maintenance training shortfall as it now exists in the Reserve Component Army National Guard and Army Reserve.

1. The chain of command (from the MACOM level to the unit level) does not fully appreciate the significance and difficulty of meeting the specific training requirements of nondivisional maintenance units. This lack is caused in part by current unit readiness reporting procedures that do not highlight critical shortfalls in training readiness.
2. Reserve Component nondivisional maintenance units are not acquiring the MOS proficiency needed to support either new or current tactical systems. It was found that proficiency on older systems was very good, but overall training was limited largely to wheeled vehicles. The continued addition into the force of new tactical systems will exacerbate this situation. Because of technological change, very little of current maintenance training is transferable to newer systems. RC units have limited access to new combat systems and must develop individual training plans around obsolete equipment.

3. Unit commanders are not fully aware of their CAPSTONE mission or the MOS proficiency needed to meet their wartime requirements. Thus, commanders can do little to develop and prioritize their training programs.

4. Spare parts, special tools, test equipment, and repair manuals are not on hand in RC nondivisional maintenance units to support wartime mission training.

5. Some units are located in remote or sparsely populated areas without access to the Army's latest equipment. Current organization and employment doctrine reduces the flexibility needed to organize and train such units in smaller elements of less than company size. Consideration should be given to redesignating these units unless they can be adequately trained in the high-technology maintenance field. Some divisional direct support units now located near potential CRMICs should be considered for conversion to nondivisional units.

6. The Army is not managing available maintenance training assets effectively. Primarily, this is a problem of command direction and emphasis. No single MACOM sees it as its responsibility to develop, identify, and finally solve the entire problem. Hence, the TRADOC did not pursue RC training initiatives that might infringe on FORSCOM unit training concepts. Conversely, FORSCOM seems to consider individual MOS training as a TRADOC responsibility and is waiting for solutions from TRADOC before moving strongly in any direction. It will take Department of the Army management to bring all "the players" on board.

7. Approximately 70 percent of the Army's total maintenance capability is organized in the Reserve Components, a significant proportion of which is

on the list of early deploying units. Despite the deployability status of such units, resources and training assets have not been sufficiently allocated in the program objectives of the Army.

Recommendations

The following training recommendations are intended to be a "menu" of training proposals, any one or combination of which is capable of having a positive impact on the training status of RC maintenance units. Obviously, early-deploying units should receive the highest priority for training assets. Late-deploying units must also have some training assets and an effective plan for postmobilization training. The deployment status of some units cannot be supported and must change. Other units will be able to increase their deployment status by the mere accident of geographic location near training assets. A fully mature program will see the formal coupling of the USAR school system with a variety of active and reserve installations (CRMICs) capable of conducting effective weekend training on a wide range of the Army's latest equipment. Ultimately, units and facilities would be aligned with wartime plans to ensure mission accomplishment.

1. Make maximum use of the reserve six month initial active duty option by providing additional maintenance training beyond AIT. This practice would provide the longest possible technical training available prior to actually rejoining the reserve unit.
2. Conduct weekend Inactive Duty Training (IDT) MOS proficiency training at selected TRADOC service schools. Courses of instruction designed to fully qualify personnel up to skill level 3 would be taught with the full

participation of USAR school qualified instructors. As the Army's Training Developer, produce CSS maintenance training materials and develop appropriate training devices.

3. Conduct weekend IDT instructional programs at selected DARCOM Army maintenance depots designed to retrain and sustain skills on high priority combat equipment. This program would also receive the important assistance of maintenance qualified USAR school staff as well as TRADOC developed exported training packages to assist instruction.

4. Conduct formal weekend IDT programs of instruction at designated RC full-time maintenance facilities. Some facilities would require additional training equipment, tools, and test sets to accomplish MOS sustainment training programs on wartime mission equipment. This option has the advantage of being accessible to a large number of units and having a nucleus of experienced full-time personnel to staff these facilities.

5. Develop and conduct evaluation programs specifically designed to provide an accurate evaluation of unit MOS maintenance skills. AT results would then provide the basis for annual IDT training plans.

6. Drawing from the "mission focusing" concept, where appropriate, orient selected units on major weapon systems based on unit ability to receive systems specific maintenance instruction. Units would be accessible to a major active installation that has limited but nevertheless important equipment and facilities.

7. Implement the CRMIC program on a regional basis where appropriate, by first identifying the maintenance training capability within those areas closest to the initial TRADOC CRMICs. In the State of California it is

proposed that the RC maintenance facilities of Fort Irwin and Camp Roberts be developed into regional CRMICs. This procedure would require the special tasking of TRADOC and the USAR school system to provide resource support. The overall proposal would provide flexibility to the program and would reduce costs, because the various MACOM CRMICs would be able to complement the others.

APPENDIX A
ORGANIZATIONS AND UNITS VISITED

I. Department of Army

Headquarters, Department of the Army Pentagon-Washington, D.C.
Deputy Chief of Staff, Operations
Deputy Chief of Staff, Logistics
Army Force Modernization Coordination Office
National Guard Bureau (Army)
Office, Chief Army Reserve

II. Major Commands

Headquarters, U.S. Army Materiel Development and Readiness Command
Washington, D.C.

Depot Systems Command, Chambersburg, Pennsylvania
Letterkenny Army Depot, Chambersburg, Pennsylvania

Headquarters, U.S. Army Forces Command, Fort McPherson, Georgia

First U.S. Army, Fort Meade, Maryland
U.S. Army Readiness and Mobilization-Region III, Fort Meade, Maryland
Readiness Group Meade, Fort Meade, Maryland
195th Heavy Equipment Maintenance Company (USAR), Westminster,
Maryland
310th Theater Army Area Command (USAR), Ft. Belvoir, Virginia
510th U.S. Army Field Depot (USAR)
1007th Light Equipment Maintenance Company Hagerstown, Maryland

Headquarters, U.S. Army Training and Doctrine Command, Fort Monroe,
Virginia

U.S. Army Logistics Center, Fort Lee, Virginia
U.S. Army Ordnance Center and School, Aberdeen Proving Grounds,
Maryland
U.S. Army Training Support Center, Fort Eustis, Virginia

III. State National Guard Activities

Maryland National Guard State Maintenance Office, Hauve de Grace,
Maryland
Virginia National Guard State Maintenance Office, Richmond, Virginia
Virginia National Guard Mobilization and Training Equipment Site
Fort Pickett, Virginia
West Virginia National Guard State Maintenance Office
Point Pleasant, West Virginia
3622nd Heavy Equipment Maintenance Company (ARNG), Lancaster,
Pennsylvania
3647th Maintenance Company, Richmond, Virginia
3664th Maintenance Company, Point Pleasant West Virginia

IV. Other

Logistics Management Institute, Washington, D.C.

APPENDIX B

THE 3662nd Heavy Equipment Maintenance COMPANY

The 3662 HEM Company, ARNG, North Dakota National Guard was visited by the Senior ARNG Advisor, DSCLOG, HQDA, on 26 May 1982. Excerpts from the trip report are provided below, because the report illustrates the problems facing CSS maintenance units that have little or no access to mission equipment.

"The 3662nd HEM Co. is an extremely capable GS maintenance unit. Much effort (as evidenced by the number of fulltime unit administrators) has been expended to bring this early deployer to its current reported C1 readiness condition. Additionally, the 25 unit members who are fulltime employees of the state National Guard maintenance system give the unit a depth of experience which far exceeds that of most active units. However, the majority of the North Dakota Guard being engineer, the only equipment in the fulltime shops and available for repair by unit personnel during training is engineer equipment, wheeled vehicles, small arms, and quartermaster items.

"Rating the unit capability to perform each of its TOE paragraph missions based on assigned personnel who are trained and qualified to do the job (using a scale of high - medium - low - none), unit representatives agreed that the probable mission capacity of paragraph:

- a. 102 - Maint Control Sec was high with the exception of the Armt Maint (line 03) and Fire Cont Inst (line 08) Inspectors.
- b. 104 - Automotive Maint Sec - high.
- c. 106 - Artillery Rep Sec - low, small amount of experience on towed tubes only, and none (line 04) and (line 06) Tank Turret Rpmn.
- d. 107 - Small Arms Sec - high.
- e. 108 - Fire Con Inst Rep Sec - none.
- f. 110 - Supply Sec - high.

- g. 111 - Service Sec - high (welding, sheet metal, machinist, and fabric repair) medium (recovery).
- h. 112 - Direct Exchange Sec - high.
- i. 114 - Engr Hvy Rep Sec - high.
- j. 115 - QM Eqpt Rep Sec - high with the exception of NBC items.
- k. 116 - Component Rep Sec - high."

"Special tools and test equipment authorized by media other than the TOE but required to repair particular equipment items, and the technical manuals which address the specifics of repair for different equipment/systems were rated, by mission area, based on their availability within the unit. The rating scale was - good (75% or better on hand) - medium (40% to 75% on hand) - low (below 40%) - and none.

Maintenance (HEM) Company, North Dakota National Guard, 26 May 1982

	<u>Special Tools</u>	<u>Manuals</u>
a. Automotive	good (wheel vehicles only - nothing for tanks or SP artillery)	none
b. Artillery	none	none
c. Small Arms	good	good
d. Fire Cont Inst	medium	low
e. Engineer	good	good
f. Services	_____	good
g. QM/NBC	_____	good QM/low NBC

"Item of interest. Although the unit has had two OCONUS training sessions, neither included any work on equipment other than wheeled vehicles. Unit commander stated that although tanks were present during last OCONUS training, and the fact that he specifically asked for track work on numerous occasions, the unit was not allowed to work on any tanks."

"Unit personnel were not aware of CAPSTONE assignment other than the first unit on the trace, 751st CS Bn. Had no idea what their deployment mission would be.

"Summary. The 3662nd HEM Co. would have extreme difficulty supporting any equipment other than engineer, wheeled vehicles, and small arms. Yet it is most probable that, upon deployment, tank and artillery repair would be required. Due to the statistical averaging of readiness reporting, the complete lack of fire control instrument repair and tank turret repair and the small qualification in artillery repair (towed only) does not degrade the total unit qualification sufficiently to reduce the rating below C1. Further, because equipment, peculiar tools, and test items are not authorized by TOE (only items which are authorized by TOE are computed in readiness reporting), the fact that the unit has none to support tanks and artillery does not degrade the readiness rating below C1. Also, manuals and/or the lack thereof is not a computation in readiness reporting. Because unit readiness reporting is based on the unit total, as opposed to mission elements within the total, and only on TOE authorized equipment; maintenance units can, and do, report high readiness but actually have little or no capability to support combat equipment."

Appendix C

A Pilot Program The Army Ordnance School (USAOC&S) Program

"Special weekend IDT is currently being conducted by the USAOC&S for RC maintenance personnel in CMF 63 MOS's. The program uses RC personnel from the 2076th USAR school to conduct ("hands on") equipment training on weekends. To date training has been conducted in skill level 1 and 2 of MOS's 41C, 44B, 44E, 45B, 45K, 45L, 63G, 63H, 63J and 63W. As the program expands, additional MOSs will be added and training will progress to skill level 3. Most students attending weekend training are on IDT status and are located within commuting distance of USAOC&S."*

The 2076th USAR school has partially integrated its staff with that of the USAOC&S. Full USAR school participation is essential to the effectiveness of this, and other CRMIC proposals.

The resources of the USAR school system can be a vital component to a cooperative resource approach in financing RC high-priority training requirements. One or more USAR schools could be formally associated with a specific Army service school. Selected USAR schools would then be a dedicated component of the CRMIC concept. Under the concept, a portion of the USAR school would no longer come under the operational control of a reserve command; however, it would remain administratively part of the USAR. The USAR school could provide instructor manpower and spaces to the Army service school from reserve resources. USAR school instructors would receive training and be certified by the Army service school system. Involvement of USAR school assets would reduce the load on required active duty resources and act as a bridge to the facilities and equipment of the Army service school for reserve members.

NOTE: The failure of the Army to implement an RC maintenance training program in the service school system can be largely traced to an absence of additional resources.

*SOURCE: OCSPAM 140-1, Reserve Component Non-Divisional Maintenance Activation/Reorganization Assistance, Sec II, pg. 1, January 1982.

Appendix D

A Phased, Integrated CRMIC Program

This appendix provides the authors' view of the basic procedures required to implement the CRMIC program Army-wide. It is a notional example only and should help the reader rationalize the diverse actions required to implement a major MC training program such as proposed in this study. This appendix also provides some perspective on the resources available in and around certain key posts or training activities. For convenience, these facilities are grouped by region.

PHASE I

FORSCOM - Identifies, in coordination with HQDA DCSOPS, NGB, and OCAR, RC maintenance facilities for potential CRMIC status. Selection is tentatively based on DARCOM, and TRADOC CRMIC plan.

- In coordination with HQDA, DARCOM, and TRADOC, recommends realignment of CSS maintenance units based on their proximity to CRMIC.
- Designates USAR schools in support of concept.
- Identifies installations having assets and control capability for summer AT evaluation of nondivisional maintenance units. These installations are initially expected to be Fort Bragg (1ST SUPCOM) and Fort Hood (13th COSCOM). FORSCOM assets at Fort Knox and Fort Benning are reviewed for potential role in coordination with TRADOC.*
- Establishes policy through reserve commands that requires CRMIC MOS training for early-deploying maintenance units.

TRADOC - Designates the Army Ordnance, Armor, and Infantry schools as CRMIC. Coordinates USAR school alignment program for above schools with FORSCOM. The above schools have strong AC maintenance programs based on the latest tactical equipment.

- With the Ordnance school in the lead, initiates USAR instructor training program, develops POI and other training materials for other DARCOM and FORSCOM CRMIC.
- All TRADOC service schools provide proponent support for CRMIC concept.

DARCOM - Designates Letterkenny, Anniston, and Tobyhanna Army depots as CRMIC.

- Identifies instructor and training materials requirement.

*NOTE: Fort Benning and Fort Knox belong to TRADOC.

- Initiates facilities planning.
- Establishes coordination with USAR schools supporting DARCOM CRMIC effort.

Phase II & III

- FORSOM - In coordination with HQDA, NGB, and OCAR, finalizes CAPSTONE Plan.
- Designates additional installations needed for CSS AT program.
 - Finalizes USAR school alignments within FORSCOM and other MACOM CRMIC.
 - Designates Fort Irwin and Camp Roberts as CRMICs in conjunction with DARCOM designation of appropriate California based depot as a CRMIC.
 - Recommends unit realignments, redesignations, or conversions based on training access capability.
 - Adds Fort Stewart as AT evaluation site.
- TRADOC - Designates Army Signal and Missile and Munitions schools as CRMIC.
- Resources all the above TRADOC CRMIC to conduct weekend instruction on all required MOSs.
- DARCOM - Designates Army depots in California (near Fort Irwin and Camp Roberts) and Kentucky (near Fort Knox, Armor School) as CRMIC.
- Designates MICOM as CRMIC in coordination with Army Missile and Munition school.

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TRAINING METHODOLOGIES TO PERMIT GREATER RELIANCE ON
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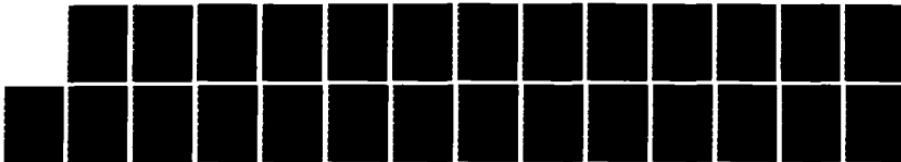
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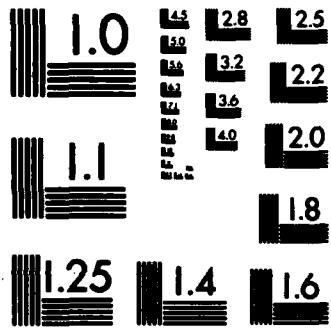
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Appendix E

Training Time Comparison

The formal New Equipment Training (NET) programmed to qualify active Army Mechanics for the M60/M48 tanks is listed below.

<u>New Equipment Training Requirement</u>					
MOS	DESCRIPTION	MI TASKS	TRAINING TIME AC* WEEKS	RC** MONTHS	
41C	Fire Control Instrument Repair	9	0.4	1.3	
45G/34G	Fire Control Computer Repair	45	3.0	10.0	
45K	Tank Turret Repairer	120	6.0	20.0	
63G	Fuel and Electrical System Repairer	144	4.0	13.3	
63H	Track Vehicle Repairer	176	6.0	20.0	

*Weeks of training time in CONUS assumed to be 40 hours of training time per week.

**Months required to provide same total hours of NET in a reserve environment. Assumes 12 hours of training time per weekend, one weekend inactive duty training period per month.

SOURCE: Modified from LMI Study 1981, pg 3-4.

NOTE: Translated to reserve environment, the time required for transition training can readily be seen as excessive, thus contributing to decay of skills and a need for reinforcement or review training. This will further extend the training time in a reserve environment.

Appendix F

Example of the DESCOM Concept

To better visualize the DESCOM supported training concept, assume the following:

A nondivisional reserve component maintenance company is located in a city approximately 50 miles from Letterkenny Army Depot. Based upon a comprehensive evaluation of the MOS capability of his personnel, the company commander with the assistance of Readiness Group Meade develops a yearly training program and a two-year calendar. The planning calendar provides the thread of continuity and organization so that the training will be progressive and focus on an achievable goal.

Readiness Group Meade assists the commander by helping to identify the shortfall in training level and to isolate the resources available to reduce the training shortfall. One of the training assets available is the depot facility.

Armed with this training evaluation and requirements, the commander contacts the depot and coordinates the details of the required training support. Coordination with the depot runs the gamut of billets, dining facility, the MOS tasks to be covered, teaching methodology (provided by TRADOC), and other administrative details. Of the eighteen to twenty MOSs in the operational sections of the unit, perhaps the depot can provide training support for twelve. Unit personnel in those twelve MOSs would commence training at the depot on a regular basis during IDT one weekend per month. Training would continue until such time that the commander's evaluations and reports indicated that further training is not warranted. The cycle would be repeated as required based on unit evaluation during AT. In the absence of wartime mission equipment at home station, the training might well continue indefinitely.

To accommodate the remaining unit MOSs it would be necessary to exercise options suggested in other alternatives of this chapter. For example, some of the remaining individuals might train with a different CRMTC, if available. Others might train at an ARNG MATES facility. The premise is that by developing a number of CRMTCs, most RC maintenance personnel can be effectively trained during IDT.

Appendix G

Analysis of the Fort Pickett MATES As a CRMTIC Asset

Mission

MATESs are established by NGR 750-2 for prepositioning selected items of equipment for immediate availability in the event of mobilization and for providing assets to units conducting annual training and inactive duty training during premobilization status. Selected units are required by the Chief, National Guard Bureau (CNSB), to position designated items of equipment authorized by the unit's MTOE at a MATES. The ARNG units contributing equipment to the Fort Pickett MATES are presented in table G-1. Normally, a unit will position designated equipment at the MATES located at its mobilization location. MATES is an activity that receives, accounts for, stores, maintains, secures, and issues equipment positioned at its site. The host State Adjutant General manages this activity with specific allocations for technician manning and certain budget program funding considered appropriate by the CNSB.

The MATES at Fort Pickett mainly supports ARNG units; however, U.S. Army Reserve, U.S. Marine Corps, and regular active army units are also supported via separate agreements.

Organization, Operations, and Physical Facilities

The Fort Pickett MATES is organized with support maintenance as described in NGB Pam 750-1, 29 May 81. The organization of a typical MATES like Fort Pickett, is presented as figure G-10. This MATES receives, stores, maintains, and issues about 500 pieces of unit MTOE equipment. It maintains organizational integrity of all stored equipment and performs maintenance that cannot be performed by the supported units. In addition to organization maintenance, extensive DS and GS maintenance is performed, as well as some depot maintenance--for example, the M-42A1 Duster--when the support is not available from a depot.

The issue/turn in, storage, warehousing, and organizational maintenance is performed by the Organization Maintenance and Warehouse Section (figure G-1). At Fort Pickett there are three of these sections, and each has been assigned a separate operation. Section One performs the required annual maintenance on all equipment on site. The work is carried out in a large building containing twelve work bays, ten of which are accessible by a ten-ton overhead crane. In addition to annual inspections that require the removal of engines and transmissions from most track equipment, organizational level maintenance is performed as required. Section Two is responsible for the issue/turn-in and backup organizational maintenance for the units in training. This section operates a forty-acre equipment park and has two moderately sized buildings with a total of eight work bays in which to perform organizational maintenance. Section Three is responsible for the warehousing and issue/turn in of weapons and equipment to and from units for training. It also conducts routine track inspections of all equipment in storage in a specific building.

TABLE G-1
ARNG UNITS CONTRIBUTING EQUIPMENT TO THE FORT PICKETT MATES

<u>STATE</u>	<u>UNIT CONTRIBUTORS</u>
	<u>AIR DEFENSE ARTILLERY</u>
VA	3-111th ADA (AD, SP) (28th Infantry Division)
	<u>ARMOR</u>
PA	1-103rd Armor (28th Infantry Division)
	<u>ARTILLERY</u>
WV	1-201st FA (155mm, SP)
	<u>CAVALRY/ARMORED CAVALRY</u>
PA	1-104th Cav (28th Infantry Division)
WV	1-150th Cav (107th Armd Calvary)
MD	B/158th Cav (58th Infantry Brigade)
VA	C/183rd Cav (116th Infantry Brigade)
TN	HMT 278th Calvary
TN	1-278th Calvary
TN	2-278th Calvary
TN	3-278th Calvary
	<u>ENGINEER</u>
VA	237th Engineer Co (116th Infantry Brigade)
	<u>INFANTRY</u>
PA	1-109th Mech (28th Infantry Division)

SOURCE: NGR 750-2, 21 January 1980 contains information presented in Table G-1.

Figure G-1

MOBILIZATION AND TRAINING EQUIPMENT SITE (MATES)
With Support Maintenance Mission

The DS, GS, and Depot level maintenance is performed by four sections identified as "Mechanical Maintenance Section," "Armament Section," "Electronics Section," and "Service Section." These four sections are located in three different buildings, and the various operations performed are approximate with the titles of the personnel assigned to those sections.

The remaining four sections, "Mobilization and Training Equipment Site Office," "Shop Control Office," "Inspection and Quality Control" and "Shop Office" perform a variety of management and administrative duties commensurate with the titles of these sections and their assigned personnel.

The Fort Pickett MATES facility, which is now spread out in fifteen buildings at several locations, will be consolidated into a new facility with forty work bays budgeted for this year at about \$5,200,000.

Equipment, Tools, and Test Equipment

The MATES at Fort Pickett has 396 pieces of ARNG and 101 pieces of USAR equipment to store, maintain, and issue to supported units. Table G-2 lists the equipment for which the Fort Pickett MATES is responsible. The volume and variety of this equipment indicate the maintenance intensity and sophistication required by the Fort Pickett MATES. The equipment is well maintained, and its excellent operational readiness is verified by 87 percent mission capable availability, favorable reports by supported units, and consistently very successful AGIs.

Equipment positioned at a MATES is authorized by "Standard Equipment Package" tables in NGR 750-2 for the MTOE of supported units, and as provided in special agreements; for example, the U.S. Army Reserve. A total of 87 MTOE's are listed in the MATES standard equipment package tables.

Tools and test equipment to support the organization, DS, GS, and limited Depot maintenance requirements at the Fort Pickett MATES was determined to be quite adequate. For example, a TOW was observed being worked on with the latest U.S. Army diagnostic equipment costing \$750,000.

Personnel

The present permanent full-time personnel authorization for the Fort Pickett MATES is 100, which is 67 percent of the requirement in its manning table. This total full-time workforce of 100 has 10 general scale (GS) employees and 90 wage grade (WG) employees. Also, 82 are permanent National Guard technicians, 13 are temporary employees, and 5 are Department of the Army Civilians (DAC). All of the 100 permanent full-time employees except one are members of the Virginia Army National Guard (VAARNG), with 75 in Company D, 116 Combat Support Battalion, of Blackstone, Virginia, which is adjacent to Fort Pickett; and 5 in the 3647th Maintenance Company, which is co-located with the Combined Support Maintenance Shop (CSMS) just south of Richmond, Virginia.

The other 19 are mostly in maintenance MOS positions in other units.

TABLE G-2
TRAINING EQUIPMENT PREPOSITIONED AT FORT PICKETT MATES

<u>NOUN-MAKE</u>		<u>Quantity</u>
CARR CGO	M-548	16
CARR CMD POST	M-577	9
CARR MORT	M-106	9
CARR MORT	M-125A1	2
CARR PERS	M-113	22
CARR PERS	M-113A2	84
GUN SP	M-42A1	53
HOW SP	M-108	5
HOW SP	M-109	11
LNCHR	M-60A1	1
REC VEH	M-88A1	4
REC VEH	M-578	7
TANK CMBT	M-48A5	143
TOW	M-220	9
CRANE 20 TON		2
CMBT ENGR VEH	M-728	1
TRK UTILITY	M-151	18

<u>USAR ASSETS</u>		
CARR CGO	M-548	7
CARR CMD POST	M-577	16
CARR MORT	M-106A1	1
CARR PERS	M-113	44
HOW SP	M-109	6
LNCHR	M-60A1	1
REC VEH	M-88	3
REC VEH	M-578	1
TANK CMBT	M-60A1	23

SOURCE: Information in Table G-2 was obtained from the Fort Pickett MATES current equipment list during the visit to the site on 28 February 1983.

The depth of experience and ability of the permanent full-time employees is outstanding. The "Electronics Repair Section" is typical of the experience and ability, and each of the nine employees was interviewed and their work was observed during the tour on 28 February 1983. This section performs DS, GS, and some depot level maintenance to include detailed internal wiring diagnosis and repairs to such equipment as radars, range finders, TOW controls, computers, fire control systems, all types of radios and teletypes, optics, etc. These nine employees had an average total military service of 20 years, ranging from 14 to 31 years, and an average total years of full-time employment in the VAARNG maintenance technician system of 16.6 years, ranging from 12 to 22 years,

Training Duties

The Fort Pickett MATES is mainly an operational maintenance organization, however, maintenance training is performed on IDT status once a month with the adjacent Company D, 116 Combat Support Battalion. The full-time employees of the Fort Pickett MATES have a requirement in their full-time job description for training of the M-day soldiers. There are 59 M-day soldiers in Company D, and during IDT they receive excellent preplanned QJT/hands-on training. Company D consistently received outstanding AGI and AT evaluations. The unit is at full strength--134 members.

Considerations for an Additional CRMTC Duty Assignment for the Fort Pickett MATES

Existing Potential

The Fort Pickett MATES has three of six elements considered necessary to assign it an additional duty as a CRMTC for the IDT training of nondivisional maintenance units. These existing three elements are physical facilities, experienced maintenance personnel, and IDT time for three out of four weekends each month. The other three elements not currently available are subsequently discussed.

Additional Elements Required for a Viable CRMTC

It seems that the Fort Pickett MATES could relatively quickly and inexpensively provide force modernization and current inventory AC equipment during IDT for other RC maintenance units, provided (1) sufficient numbers of the full-time employees are U.S. Army school trained, (2) force modernization and current inventory AC equipment or training devices are readily available, and (3) associated tools and test equipment are provided.

After the full-time employees are school trained, it is proposed that they be utilized as IDT instructors by funding Additional Training Assemblies (ATAs). For example, if 60 of the 100 full-time employees were school trained for performing IDT instructions, then 20 could be available for each of the

three weekends open each month for IDT of other ARNG and USAR maintenance units. If an instructor-student ratio of 5:1 is assumed, then 300 individuals could receive training each month.

The training of the 60 full-time employees to be IDT instructors may be accomplished in one year. This would assume that 10 full-time employees could be released during the year for eight weeks of force modernization instruction training. Since this would cause a shortage of 10 full-time employees for 48 out of the 52 weeks during the first year, temporary employees could be used as they are now used to support the Army Reserve equipment.

The remaining decisions would involve the type of force modernization equipment training needed, unit identifications and alignments, the respective training devices, and resources for this project.

Appendix H

Army Depot Capabilities (Selected CONUS Depot Installations)

<u>Depot</u>	<u>Primary Functions</u>
Anniston Army Depot	<ul style="list-style-type: none">- Prime depot in maintenance of combat vehicles, small arms, Lance Shillelagh, TOW and Dragon Missiles - lead depot for M-1 Abrams tank
Lexington - Blue Grass Activity	<ul style="list-style-type: none">- Overhauls communication equipments electronics sets, kits, and outfits
Letterkenny Army Depot	<ul style="list-style-type: none">- Prime maintainers for all self-propelled and towed artillery, light recovery vehicles, and air defense guided missiles systems
	<ul style="list-style-type: none">- Future maintainer for Patriot Missile and Field Artillery Support Vechicle
Red River Army Depot	<ul style="list-style-type: none">- Primary depot for repair of light armored vehicles, etc.
	<ul style="list-style-type: none">- Selected to be prime depot for Infantry Fighting Vehicle (IFV) and Multiple Launch Rocket System (MLRS)
Sacramento Army Depot	<ul style="list-style-type: none">- Maintenance on selected electronic items
Tobyhanna Army Depot	<ul style="list-style-type: none">- Overhauls strategic and tactical communications gear and photographic equipment
Tooele Army Depot	<ul style="list-style-type: none">- Overhauls tactical wheeled vehicles, generators, rail locomotives, and redeye antiaircraft missile

SOURCE: Information Fact Sheet, U.S. Army Depot System Command, Chambersburg, Pennsylvania, undated.

NOTE: Above depots selected because they have a stated mission encompassing maintenance functions. Their unique capabilities provide the basis of a Centralized Reserve Maintenance Training Center (CRMTC) or a cornerstone of the regional training concept discussed as Proposal Four.

FOOTNOTES

CHAPTER I (Pages 1-7)

1. E. A. Narragon, J. M. Neil, J. R. Wilk, Effectiveness of Army Direct and General Support Maintenance Units, Working Paper No. 5, Capability of USAR and ARNG Units (Washington, D.C.: Logistics Management Institute, April 1979).
2. CAPSTONE Alignment Plans, HQ FORSCOM, Fort McPherson, Georgia, November 1982 (under revision).
3. FM 100-5, Operations, (Air, Land Battle Concepts), USACGS, Fort Leavenworth, Kansas, 1 July 1976.
4. The largest increases are in the artillery, communication, and electronic warfare elements. Armored maneuver battalions will be equipped with the M-1 Tank by FY 1986.
5. Army Modernization Information Memorandum (AMIM), FY 1983, Washington, D.C., August 1982.
6. Corps logistic support studies for Division 86 Capabilities Studies have not been published by the Army.
7. Basic to the proposed centralized training concept is that designated schools and facilities either would have or would be given at some point in the program enough training, equipment, and instructors to provide training for most of the needed skills required in an RC maintenance unit. To provide for certain low-density skills might not, however, be cost effective; and when so identified, consideration should be given to deleting that skill from reserve force training requirements or structure.
8. Trip Report, 1007 LEM Co, Hagerstown, Maryland, 12 December 1982. Trip Report, 3622 HEM Co. Lancaster, Pennsylvania, November 1982.
9. Chief Staff Memorandum, 80-135-19, "Support Unit Capability Alignment," 7 July 1980. DF, DAMO-FM, Subj: "Support Unit Capability Alignment," 20 December 1982, Pentagon, Washington, D.C. This DF reported on a 16 December 1982 Working Group Meeting attended by MACOM and DA staff with the objective of developing an action plan that would coordinate an effort to upgrade the mobilization preparedness of RC CSS units.
10. Effective individual MOS training, where found, was usually the result of a unique situation such as unit proximity to an active army installation where equipment and instruction was available. Much that was accomplished in individual MOS training was the result of individual unit effort in the absence of coordinated programs.

11. The integration of various MACOM facilities within certain geographical areas should be a logical outgrowth of a detailed master plan establishing the CRMICs. The seven areas discussed in Chapters III and IV hold great potential because of the unusually high number of installations capable of providing some part of a total training program.

FOOTNOTES

Chapter II (Pages 8-27)

1. E. A. Narragon, J. M. Neil and J. R. Wilk, Effectiveness of Army Direct and General Support Maintenance Units, Working Paper No. 5, Capacity of USAR and ARNG Units, Task UL804 (Washington, D.C.: Logistics Management Institute, April 1979), pp. III-1 -- III-3.
2. Interviews and briefings, 195th Heavy Equipment Maintenance Company, Westminster, Maryland, December 1982.
3. Interviews and briefings, 1007th Light Equipment Maintenance Company, Hagerstown, Maryland, December 1982.
4. Interviews and briefings, 3622nd Heavy Equipment Maintenance Company, Lancaster, Pennsylvania, November 1982.
5. Interviews and briefings, 3647th Maintenance Company, Richmond, Virginia, November 1982.
6. Memorandum for Record from Col. Jack L. Winkler, Senior ARNG adviser, DCSLOG, HQDA. Trip Report, Visit to 3622nd Heavy Equipment Maintenance (HEM) Company, North Dakota National Guard, 26 May 1982, undated.
7. Narragon, Neil, and Wilk. Although actual numbers could not be published because of classification, all units visited considered themselves immediately deployable from a training aspect. Other areas, however, such as equipment readiness was not reported as high.
8. HQ U.S. Army Forces Command, FORSCOM Regulation No. 71-1, Force Development, Force Modernization, Interim Draft (Fort McPherson, Georgia, 21 August 1981), p. 1.
9. The question arises as to what may be the proper role of the training staff at HQDA and HQFORSCOM when so much staffing occurs under the heading of Force Modernization.
10. Trip Report, Visit to HQTRADOC, Fort Monroe, Virginia, 19-21 October and 7 November 1982. Interview, selected personnel ATSC, Fort Eustis, Virginia, 20 October 1982. Interview, selected personnel LOGC, Fort Lee, Virginia, 21 October 1982. Trip Report, Visit to U.S. Army Ordnance School, Aberdeen Proving Ground, Maryland, November 1982.
11. Ibid.

FOOTNOTES

CHAPTER III (Pages 28-43)

1. Trip Report, U.S. Army Ordnance School, Aberdeen Proving Ground, Maryland, November 1982.
2. Jack L. Winkler, "Maintenance Unit Mission Focusing, An ALARM Generated ODCLSOG Concept to Improve the Readiness to Provide Wartime Support of Tanks, Artillery and other Combat Power Items," concept paper, DAALO-PLM, Washington, D.C., 15 November 1982.
3. Edward D. Simms, Jr., Thomas A. White, A Concept For Training Reserve Component Mechanics to Support the M-1, M1106, a concept paper (Washington, D.C.: Logistics Management Institute, October 1981). Memorandum for Record, Overview of Final Briefings of M1106, Pentagon, Washington, D.C., 11 February 1982.
4. Comment: Simms and White sought answers to essentially the same issues but focused on a single weapon system. Their paper proposed the establishment of Regional Training Centers at AC installations having large concentrations of the Army's latest battle tank. This would require training at AC divisional installations. Conceptually, the study failed to analyze the training potential of RC maintenance facilities as well as DARCOM and TRADOC installations. By focusing on the M-1 tank, it left open the question of how to train other skills. Additionally, the paper failed to identify instructors and how the RTC will be manned. The paper contributed significantly, however, to the thrust of this study; its concepts, premises, and criteria; because it developed new thinking on the subject of centralized training.
5. This observation is based on discussions with commanders in the field who felt that TRADOC task-oriented instruction did not recognize the kind of equipment their units trained on. GS level maintenance requires a higher level of skill than normally taught during IET. The wide variety of equipment a CSS maintenance unit is expected to be proficient on defeats system-specific task-oriented instruction unless training is transferable to other systems.
6. Instructional techniques appropriate for RC training must be studied thoroughly. TRADOC is moving toward an even narrower critical skill/task oriented instruction for the active force. This may not be appropriate for CSS level maintenance training. Trip report, HQTRADOC, 19-21 October, 1982.
7. Reservists generally follow the Army's 12 week basic and advanced training programs. An interesting question, and possible training consideration would be to offer up to one-year training periods for reservists undergoing maintenance training. This training could be limited to nondivisional maintenance unit members. It is clear that reservists require a different approach to IET than that provided the active counterpart.

FOOTNOTES

CHAPTER IV (Pages 44-71)

1. Trip Report, U.S. Army Ordnance School, Aberdeen, Maryland, January 1983. Memorandum for the DCSLOG, DA, Subject: "Utilization of Army Service Schools to Conduct Premobilization Inactive Duty Training (IDT) for Personnel of RC," USAOC&S, Aberdeen Proving Ground, Maryland, 5 May 1981. Briefings and other documentation reveal a consistent Army Ordnance School effort to expand the pilot RC CSS maintenance program.
2. The USADS, Fort Bliss, Texas, and the USAAS, Fort Sill, Oklahoma, are geographically unsuitable for a direct CRMIC role. However, they retain proponent responsibility for CRMIC training materials. Aviation proponent schools, Fort Eustis and Fort Buckner, although beyond the scope of this paper, could also benefit from the CRMIC concept.
3. Trip Report notes on visit to Letterkenny Army Depot, Chambersburg, Pennsylvania, 17 December 1982.
4. "Center of excellence" refers to DESCOM's concept of assigning each depot a specific technical area for which that depot is the center of expertise within the depot system.
5. U.S. Army Material Development and Readiness Command, Installations Training Support Capabilities (Washington, D.C., 16 June 1982).
6. Tobyhanna Army Depot, Projected Training Schedule, FY 1983.
7. Same as note 5 above.
8. This is not a contradiction of earlier statements concerning the need for TFADCC to develop theoretical courses for IET follow-on training. Minimum essential task for each weapon system should be part of a comprehensive POI development program. Theoretical foundation courses are essential to today's technological environment. This is a more resource-intensive approach and will require strong USAR school support.
9. Jack L. Winkler, "Maintenance Unit Mission Focusing, An ALARM Generated ODCSLOG Concept," DALO-PLM, Washington, D.C., 15 November 1982.
10. This conclusion is based on interviews, briefings, and inspection of reports furnished by staff members of NGB and by the NG state maintenance officers of West Virginia, Virginia and Maryland. Specific dates and individuals contacted are listed in the bibliography.
11. Information confirmed by Major M. R. Clark of the NGB staff and Mr. Les Tollund of the USAR staff on 28 March 1983.
12. Information confirmed by Major M. R. Clark of the NGB staff on 28 March 1983.

13. The analysis of the Fort Pickett MATES as a CRMIC resource is based on inspection of the site by a member of the Study Group on 28 February 1983. Major James Duke of the ARNG and superintendent of maintenance for the Fort Pickett MATES was the POC who provided data on equipment and personnel contained in this analysis.

14. The Army Missile and Munitions School (MMS) is a special case, and designation as a regional CRMIC must be carefully studied. Because of the close proximity of an ARNG MATES at Fort McClellan, Alabama, and DARCOM's Missile Command, also located at Redstone Arsenal, designation of the Army MMS as a CRMIC would group together some important assets and create an important opportunity for training. The MMS area, however, has considerable overlap with Fort Benning. Also, map inspection does not reveal a large number of RC nondivisional maintenance units in the MMS area. Some redesignation of close-by DS units might be considered. The MMS would, nevertheless, have an important CRMIC role within the Fort Benning area.

15. As noted in the listing of proposed regional CRMICs, not all the proposed sites are TRADOC schools. Although Camp Roberts and Fort Irwin and some other sites yet to be identified are not TRADOC facilities, TRADOC must assume responsibility for the training conducted there just as it would at one of its own schools.

16. Over time, as the capabilities of the above CRMICs mature, it would be logical to locate as many RC nondivisional maintenance units in these areas as possible. Many civilian members of these maintenance facilities are already in a RC pay status. An unknown but potentially large number could be recruited into an RC maintenance unit.

FOOTNOTES

CHAPTER V (Pages 72-77)

1. Minimum essential readiness is not easily defined. Based on current deployment schedules, it means that enough units have access to training facilities to support M+30 deployment schedules to the European theater. In reality it will be whatever planners feel is affordable. The risk will be the percentage of units unable to take advantage of CRMIC program.

GLOSSARY

AC	Active Component
ADT	Active Duty for Training
AFMCO	Army Force Modernization Coordination Office
AGI	Annual General Inspection
AIT	Advanced Individual Training
AMSA	Area Maintenance Support Activity
APG	Aberdeen Proving Grounds
ARNG	Army National Guard
ARTEP	Army Training and Evaluation Program
AT	Annual Training
ATA	Additional Training Assemblies
ATSC	Army Training Support Center (TRADOC)
CMF	Career Management Field
CNGB	Chief, National Guard Bureau
COMETS	Command Maintenance Evaluation Teams
CONUS	Continental United States
COSCOM	Corps Support Command
CRMTC	Centralized Reserve Maintenance Training Center
CSMS	Combined Support Maintenance Shop
CSS	Combat Service Support
DAC	Department of the Army Civilian
DARCOM	Materiel Development and Readiness Command
DESCOM	Depot Systems Command
DIO	Director of Industrial Operations
DS	Direct Support

BCS	Equipment Concentration Site
FM	Force Modernization
FORSCOM	Forces Command
FTX	Field Training Exercise
GS	General Support
HEM	Heavy Equipment Maintenance
HQDA	Headquarters Department of the Army
IOT	Inactive Duty Training
IET	Initial Entry Training
IRR	Individual Ready Reserve
ISD	Instructional Systems Development
LEM	Light Equipment Maintenance
LMI	Logistics Management Institute
LOGC	Logistics Center (TRADOC)
MACOM	Major Command
MATES	Mobilization and Training Equipment Site
MICOM	Missile Command (DARCOM)
MOS	Military Occupational Speciality
MTOE	Modified Table of Organization
MUTA	Multiple Unit Training Assembly
NGB	National Guard Bureau (HQDA)
NGR	National Guard Regulation
OJT	On the Job Training
OCONUS	Outside Continental United States
POI	Program of Instruction

RC Reserve Component
SUPCOM Support Command
TMDE Test, Measurement and Diagnostic Equipment
TOAD Tobyhanna Army Depot
TOW Tube-Launched Optically-Tracked Wire-Guided
TRADOC Training and Doctrine Command
USAADS U.S. Army Air Defense School (TRADOC)
USAAS U.S. Army Artillery School (TRADOC)
USAAMMS U.S. Army Missile and Munitions School (TRADOC)
USAR U.S. Army Reserve
USAEUR U.S. Army Europe
USAOC&S U.S. Army Ordnance Center and School
VAARNG Virginia Army National Guard
WG Wage Grade

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